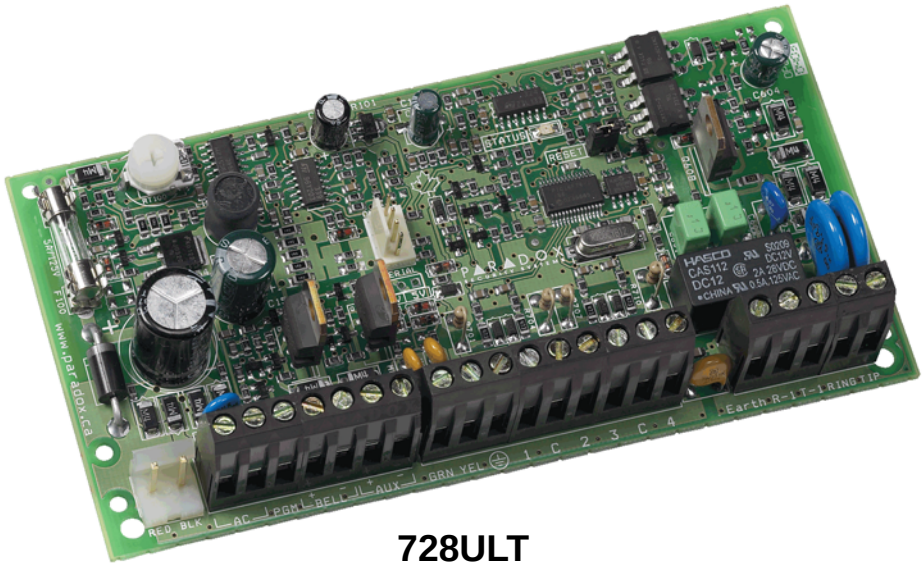
ESPRIT™

728 ULTRA™

VERSION 4.0



728ULT

REFERENCE & INSTALLATION MANUAL

PARADOX®
SECURITY SYSTEMS

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PART 1: INTRODUCTION

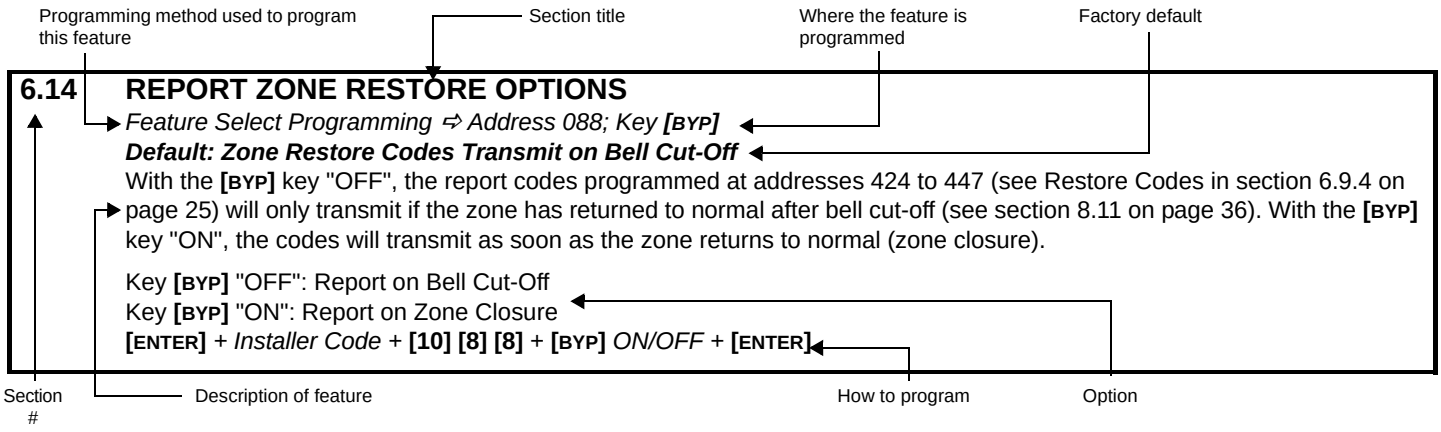
1.1 ABOUT THIS MANUAL

This manual provides all the information you will need to understand panel operation, features and functions. If you are familiar with other security control panels, we recommend that you read this manual at least once to familiarize yourself with panel features and programming. Please refer to the index for a complete list of this manual's contents.

The following terminology is used throughout this manual:
[ ] = indicates a key on the keypad
[ ] = indicates a key on the keypad must be pressed

⚠ = indicates a warning or important note

italic = indicates data that must be entered, reference to a section in the manual, or an example
"SMALL CAPS" = indicates terminals or LEDs that are located on the control panel, keypad, etc.


Programming method used to program this feature
Section title
Where the feature is programmed
Factory default
6.14 REPORT ZONE RESTORE OPTIONS
Feature Select Programming ⇨ Address 088; Key [BYP]
Default: Zone Restore Codes Transmit on Bell Cut-Off
With the [BYP] key "OFF", the report codes programmed at addresses 424 to 447 (see Restore Codes in section 6.9.4 on page 25) will only transmit if the zone has returned to normal after bell cut-off (see section 8.11 on page 36). With the [BYP] key "ON", the codes will transmit as soon as the zone returns to normal (zone closure).
Key [BYP] "OFF": Report on Bell Cut-Off
Key [BYP] "ON": Report on Zone Closure
[ENTER] + Installer Code + [10] [8] [8] + [BYP] ON/OFF + [ENTER]
Section #
Description of feature
How to program
Option

1.2 NEW FEATURES

- Serial or parallel wiring for ATZ connections (page 29)
- Master Code Lock (page 14)
- New Pager reporting options; Pager Delay (page 24), Pager Format Options (page 24) and Pager Report Event Options (page 25)
- Closing Delinquency Timer and Time options (page 36)
- Auto Test Report Time Option (page 26)
- Restrict Arming on Battery Failure (page 36) and Restrict Arming on Tamper Trouble (page 37)
- New on-board green **STATUS** LED

1.3 SPECIFICATIONS

- AC power: 16.5Vac transformer with minimum 20VA rating (40VA recommended), 50-60Hz
- Battery: 12Vdc, 4Ah/7Ah
- Aux. power: 450mA (fuseless shutdown at 650mA)
- Bell output: 1A (fuseless shutdown at 3A)
- PGM outputs: One 50mA PGM transistor output
- Serial data output: (1200, 1, N) for use with accessory modules (not for use with UL systems)

Specifications may change without prior notice

1.4 ABOUT PARADOX

Paradox Security Systems strives to design and manufacture the best security products money could buy. Our products are of the highest quality standards and most importantly meet the needs and expectations of our customers.

By refusing to settle for the limitations of existing technology, Paradox makes it clear, we are not interested in mirroring the products already on the market. Breaking down barriers to better technology is what innovation is all about.

The guiding principle behind Paradox research and development has always been to create security products that make sense. Whether the situation calls for a full range of "intelligent" and easy to use control panels, efficient peripheral security devices, or "false alarm free" motion or breaking glass detectors. We are putting all our resources into developing products that reflect our twin philosophies of innovation and user-friendliness. Now we invite you to reap the benefits.

PART 2: INSTALLATION

2.1 LOCATION AND MOUNTING

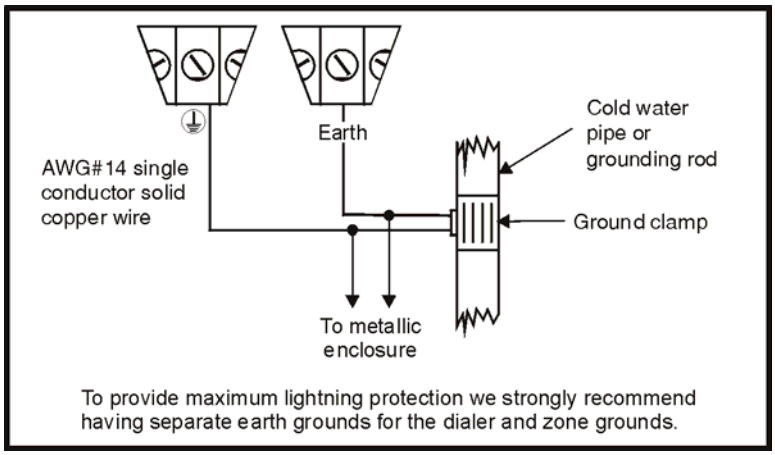
Remove the printed circuit board, mounting hardware and keypad from the packaging inside the panel box. The circuit board should not be mounted into the back of the cabinet, until all cables are pulled into the cabinet and prepared for connection. Before mounting the cabinet, push the five white nylon-mounting studs into the back of the cabinet. Select an installation site that is not easily accessible to intruders. Leave at least 2" around the panel box to permit adequate ventilation and heat dissipation. The installation site should be dry and close to an AC source, ground connection and telephone line connection.

2.2 EARTH GROUND

Connect the zone and dialer ground terminals from the control panel to the metallic enclosure and cold water pipe or grounding rod as per local electrical codes.

For maximum lightning protection, use separate earth grounds for the zone and dialer grounds as shown in Figure 2.1. For UL installations, the metallic enclosure must be grounded to the cold water pipe or grounding rod.

Figure 2.1: Earth Ground Connection


Earth
Cold water pipe or grounding rod
AWG#14 single conductor solid copper wire
Ground clamp
To metallic enclosure
To provide maximum lightning protection we strongly recommend having separate earth grounds for the dialer and zone grounds.

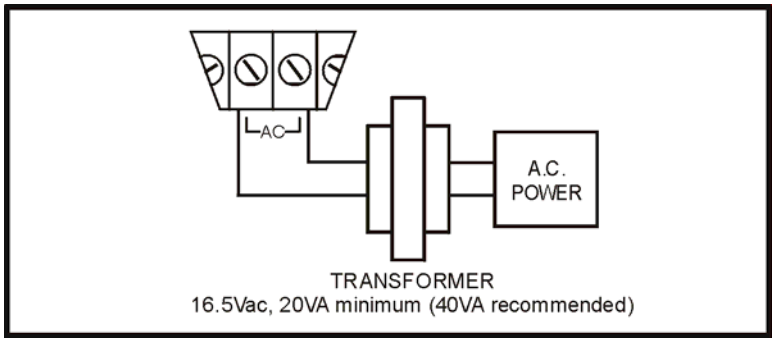
2.3 AC POWER

2.3.1 AC POWER

Use a 16.5Vac (50-60Hz) transformer with a minimum 20VA (40VA recommended) rating to provide sufficient AC power. Do not use any switch-controlled outlets to power the transformer. UL listed systems require the K12 model T16V40 transformer and ULC listed systems require Frost model FTC 1637 transformer. Connect the transformer as shown in Figure 2.2.

Do not connect the transformer until or the backup battery until all the wiring is completed.

Figure 2.2: Connecting AC Power

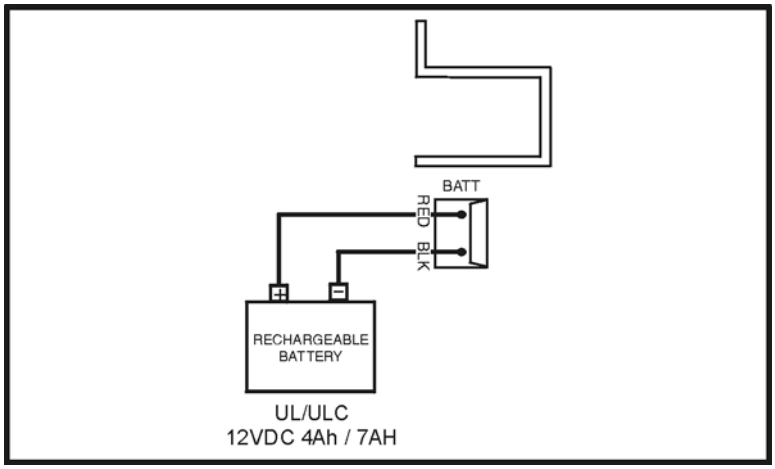


2.3.2 BACKUP BATTERY

We recommend connecting a back-up battery to power the control panel, in case of power loss. UL/ULC installations require the use of a back-up battery. Use a 12Vdc 4Ah / 7Ah rechargeable acid/lead or gel cell battery. Connect the back-up battery after applying the AC power as shown in Figure 2.3 on page 5. When installing the battery, verify

proper polarity, as reversed connections will blow the battery fuse. Connect the "red" battery lead to the positive battery terminal, and the "black" battery lead to the negative battery terminal of the control panel.

Figure 2.3: Connecting the Backup Battery



2.3.3 AUXILIARY POWER TERMINALS

The AUX+ and AUX- terminals on the control panel can provide a maximum of 450mA 12Vdc (250mA 12Vdc for 24hr stand-by on UL/ULC installations). You can use the auxiliary power supply to power the motion detectors, keypads and other accessories in your security system. Their combined current consumption should not exceed 650mA (see Table 1). The auxiliary supply is microprocessor-protected against current overload and automatically shuts down if the current exceeds 650mA. Auxiliary power will resume once the overload condition has restored and within 1 to 60 seconds after performing the dynamic battery test (see below).

Table 1: *Current Consumption Table*

Modules	Current Consumption	
	Typical	Maximum
Motion Detectors (see detector instructions for details)	10 to 50mA	
636 / 646 LED Keypads	15mA	30mA
642 LCD Keypads	40mA	55mA
708 Comm. Module	35mA	75mA

2.3.4 BATTERY TEST

The control panel conducts a dynamic battery test under load every 60 seconds. If the battery is disconnected, or its capacity is too low, the **[1]** key in the trouble display mode will be on. Key **[1]** also comes ON if the battery voltage drops to 10.5 volts or less when the control panel is running on the back-up battery (no AC). At 8.5 volts, the panel shuts down and all outputs close.

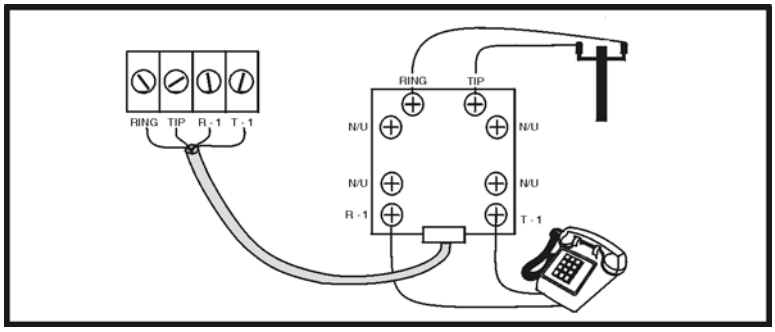
2.3.5 KEYPAD FUNCTION TEST

We recommend conducting a "power-up" test on keypads installed far from the control panel. To do so temporarily connect the keypads near the control panel and connect the transformer. After 10 seconds, begin entering random commands on the keypad and verify that the keypad "beeps" in response to these commands. Then open a zone to ensure that the keypad and the control panel are responding to these signals. If the keypad does not respond and indicator lights do not illuminate, verify that approximately 16Vac is present at the "AC" terminals. If AC is present, check the keypad wiring and verify there isn't a short between the black and red keypad wires. If the keypad does not respond, please contact your local Paradox Distributor.

2.4 TELEPHONE LINE CONNECTION

Connect the incoming telephone company wires into the tip and ring connections of the control panel. Then run the wires from T-1 and R-1 to the telephone system as shown in Figure 2.4 on page 6.

Figure 2.4: Telephone Line Connection

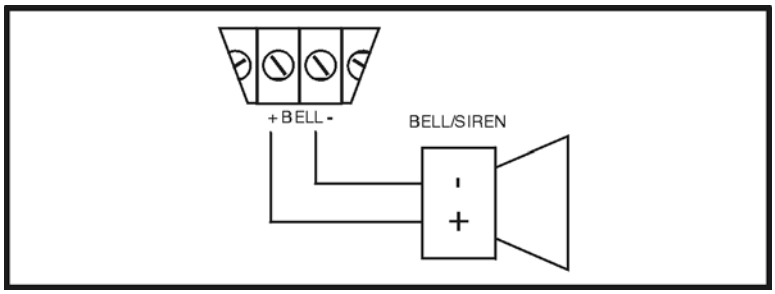


2.5 BELL / SIREN OUTPUT

The BELL+ and BELL- terminals, power bells and/or other warning devices requiring a steady voltage output during an alarm. The bell output supplies 12Vdc upon alarm and can support two 20-watt sirens or one 30-watt siren. The bell output is microprocessor-controlled and will automatically shut down if the current exceeds 3A. If the load on the bell terminals returns to normal, the processor will resume power to the bell terminals upon generation of another alarm. When connecting sirens (speakers with built-in siren drivers) please verify correct polarity. Connect the positive lead to the BELL+ terminal and the negative lead to the BELL- terminal of the control panel as shown in Figure 2.5 below.

If the Bell/Siren output is not being used, connect a 1kΩ resistor across the BELL+ and BELL- terminals.

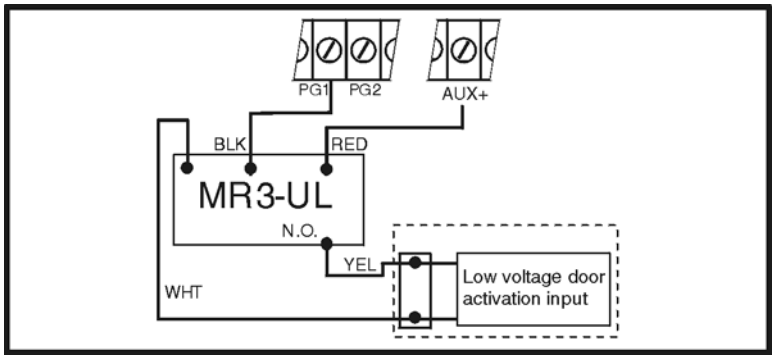
Figure 2.5: Bell / Siren Output Connection



2.6 PROGRAMMABLE OUTPUTS (PGMS)

The 728 Ultra control panels include one fully programmable output (PGM). When a specific event or condition occurs in the system, a PGM can be used to reset smoke detectors, activate strobe lights, open/close garage doors and much more. The PGM provides a maximum 50mA output. If the current draw on a PGM output is to exceed 50mA, we recommend the use of a relay as show in Figure 2.6. The PGM can be programmed to toggle on and off from more than a thousand different events. For example, the PGM can open and close an automatic garage door by pressing keys **[1]** and **[2]** simultaneously on the keypad. For details on how to program the PGM, refer to PGM (PROGRAMMABLE OUTPUT) on page 38.

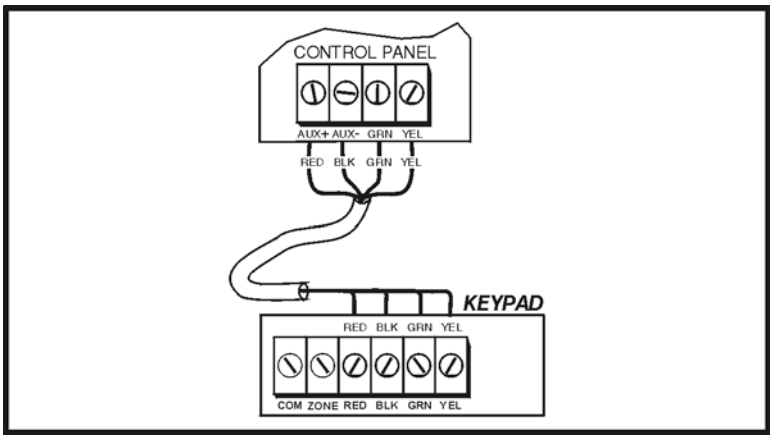
Figure 2.6: Connecting the PGM output



2.7 KEYPAD AND KEYSWITCH CONNECTIONS

Connect the four keypad connections labeled **RED**, **BLACK**, **GREEN** and **YELLOW** to the corresponding colour terminals on the control panel as indicated in Figure 2.7 below. ***Note, on some keypads you may have to remove the back panel to make the connections.*** Connect the keyswitch to the **GRN** and **BLK** terminals of the control panel as shown in Figure 2.7 below. To enable this function please refer to section 8.5 on page 35 and section 11.8 on page 45 for more information on keyswitches.

Figure 2.7: Keypad and Keyswitch Connections

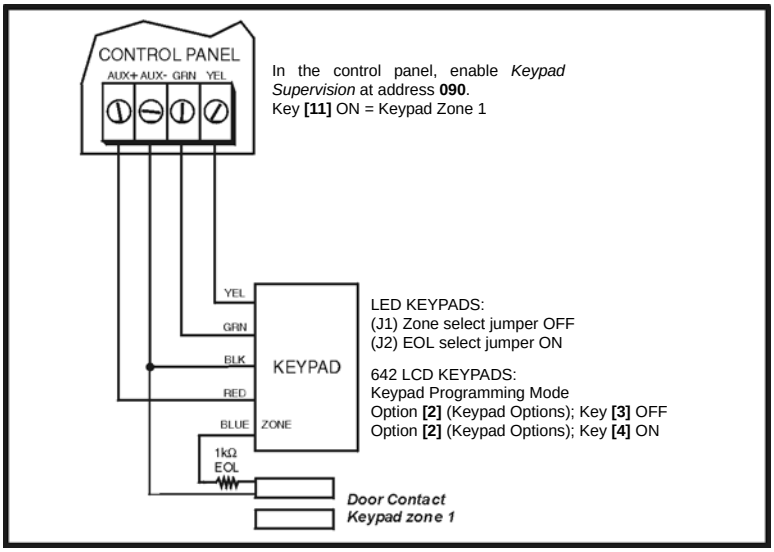


2.8 KEYPAD ZONE CONNECTIONS

Each keypad comes with one input terminal, allowing you to connect one detector or door contact directly to the keypad.

Example: A door contact located at the entry point of an establishment can be wired directly to the input terminal of the entry point keypad instead of wiring the door contact all the way to the control panel.

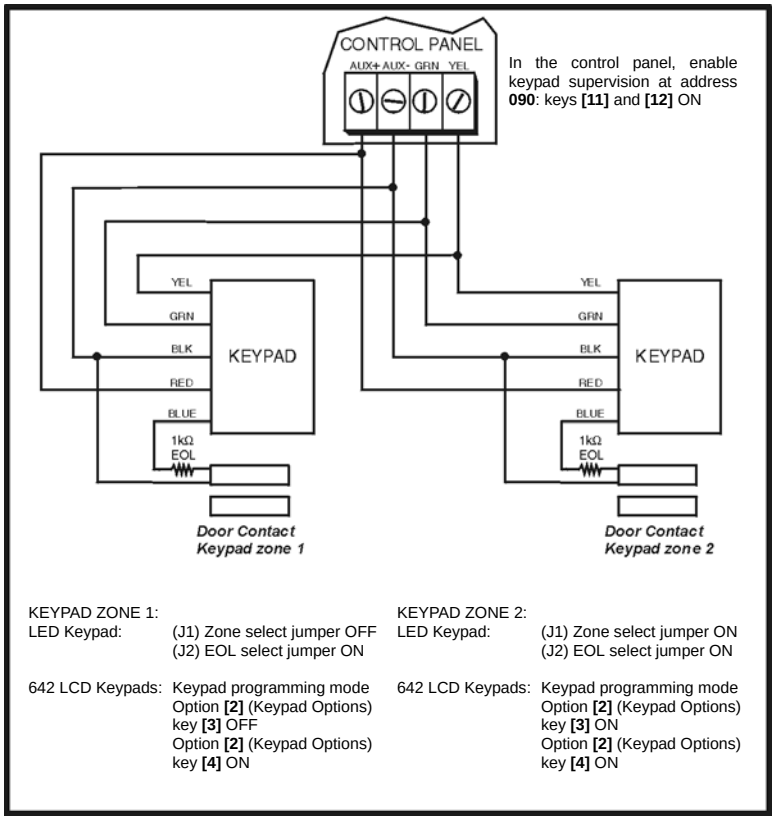
Figure 2.8: Connecting One Keypad Zone



Regardless of the number of keypads in the system, the control panel supports a maximum of two keypad zones. ***Note: If using two keypad zones, one keypad must be defined as keypad zone 1 while the other must be defined as keypad zone 2 (see Figure 2.9 on page 8).*** The control panel will recognize these added zones as shown in Table 2 on page 8.

*Example: A security installation is comprised of five keypads. Of these five keypads only two can have their zone input terminals enabled (see Figure 2.9 on page 8). The other three keypads must have their zone input terminals disabled as described **Disabling 636 and 646 Keypad Zones** and **Disabling 642 Keypad Zones** on page 8.*

Figure 2.9: Connecting Two Keypad Zones Using Two Keypads



Disabling 636 and 646 Keypad Zones

If the keypad zone input terminal is not being used, disable it by shorting the blue zone wire with the black "com" wire of the keypad.

Disabling 642 Keypad Zones

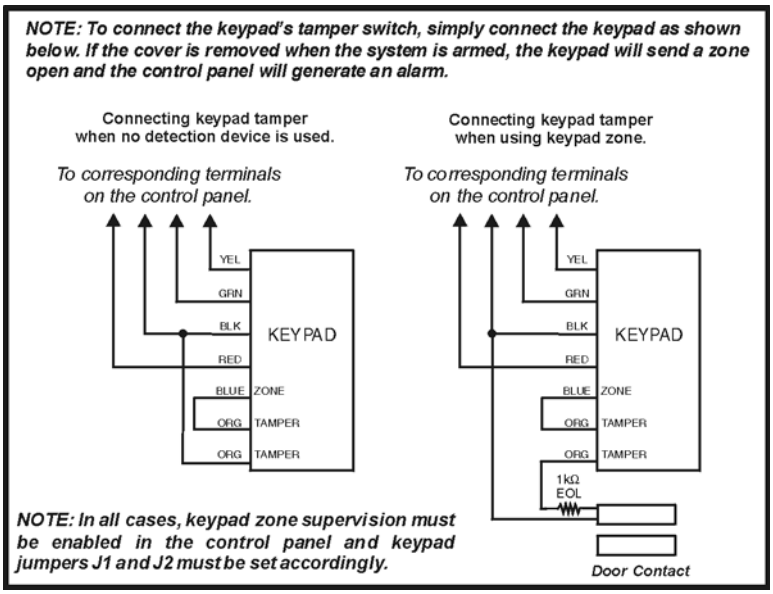
If the keypad zone input terminal is not being used, disable it by shorting the zone and com terminals of the keypad with a 1kΩ resistor.

Table 2: *Keypad Zone Recognition Table*

If using an LED keypad, set the Zone Select Jumper (J1) on the back of the keypad: Zone Select Jumper J1 OFF = Keypad Zone 1 Zone Select Jumper J2 ON = Keypad Zone 2 ***Note: If the Zone Select Jumper is changed, the control panel will only recognize the change when the keypad is disconnected and reconnected.*** If using a 642 LCD Keypad, program the keypad definitions as follows: Keypad Programming Mode, option **[2]** (Keypad Options); Key **[3]** OFF = Keypad Zone 1 Keypad Programming Mode, option **[2]** (Keypad Options); Key **[3]** ON = Keypad Zone 2 Keypad Programming Mode, option **[2]** (Keypad Options); Key **[4]** ON = Keypad Zone Sending Enabled The control panel will display open keypad zones as follows: ATZ disabled — ATZ enabled Keypad Zone 1 = Zone 5 — Keypad Zone 1 = Zone 9 Keypad Zone 2 = Zone 6 — Keypad Zone 2 = Zone 10

2.9 CONNECTING A TAMPER SWITCH ON A KEYPAD

Figure 2.10: Connecting a Tamper switch on a Keypad


NOTE: To connect the keypad's tamper switch, simply connect the keypad as shown below. If the cover is removed when the system is armed, the keypad will send a zone open and the control panel will generate an alarm.
Connecting keypad tamper when no detection device is used.
To corresponding terminals on the control panel.
YEL
GRN
BLK
RED
BLUE
ORG
ORG
KEYPAD
ZONE
TAMPER
TAMPER
Connecting keypad tamper when using keypad zone.
To corresponding terminals on the control panel.
YEL
GRN
BLK
RED
BLUE
ORG
ORG
KEYPAD
ZONE
TAMPER
TAMPER
1kΩ EOL
Door Contact
NOTE: In all cases, keypad zone supervision must be enabled in the control panel and keypad jumpers J1 and J2 must be set accordingly.

Once the keypad zones have been defined you must enable Keypad Zone Supervision (see section 7.13 on page 32 and section 7.14 on page 32) in the control panel.

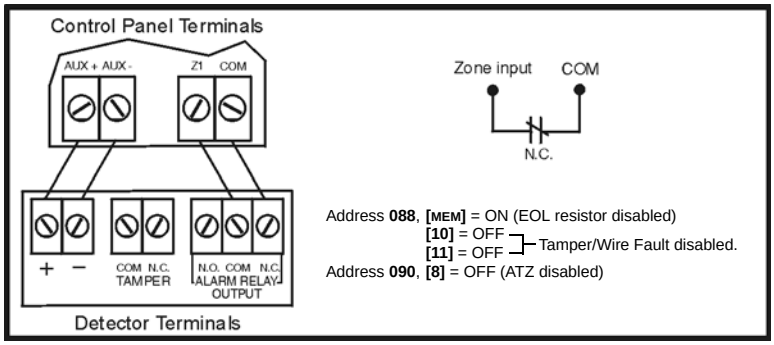
2.10 SINGLE ZONE INPUT TERMINAL CONNECTIONS

The system hardware recognizes the following single zone input terminal connections. For more information on programming the options mentioned below see ZONE DEFINITIONS on page 28.

2.10.1 N.C. CONTACTS, WITHOUT EOL RESISTOR

If your security installation does not require tamper or wire fault detection, connect the detection devices and program the control panel as shown in Figure 2.11. This setup will communicate an open or closed zone to the control panel, displaying open zones on the keypad. Do not use devices with N.O. contacts in this setup, as this will cause the control panel to remain in alarm.

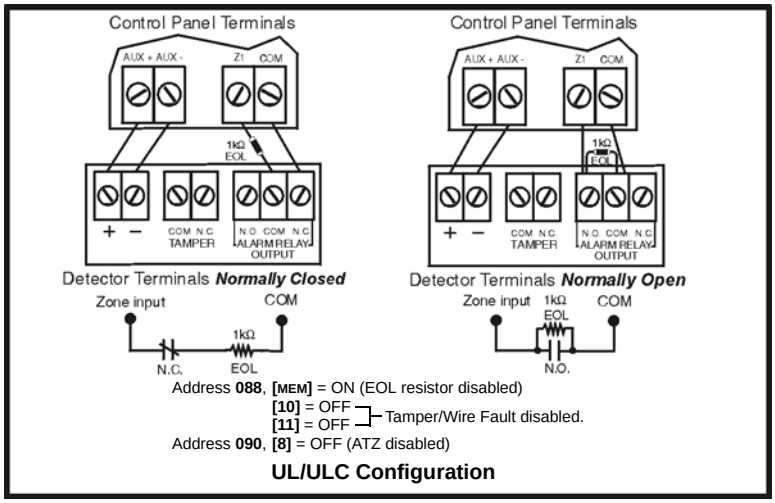
Figure 2.11: N.C. Contacts, without EOL Resistor



2.10.2 N.O. AND N.C. CONTACTS, WITH EOL RESISTOR (UL/ULC)

If your security installation does not require tamper or wire fault recognition but some detection devices will use normally open contacts. Connect all detection devices using a 1kΩ end of line (EOL) resistor and program the control panel as shown in Figure 2.12. This setup will communicate an open or closed zone to the control panel, displaying open zones on the keypad.

Figure 2.12: N.O. and N.C. Contacts, with EOL Resistor (UL/ULC)

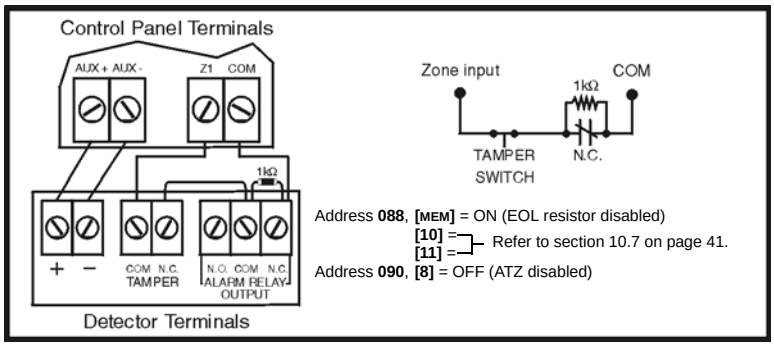


UL/ULC Configuration

2.10.3 N.C. CONTACTS, WITHOUT EOL RESISTOR, WITH TAMPER RECOGNITION

If your security installation requires tamper recognition, all detection devices must use normally closed contacts. Connect the devices and program the control panel as shown in Figure 2.13 on page 10. This setup will communicate an open or closed zone to the control panel, displaying open zones on the keypad. The control panel will also communicate any detected tampers (cuts) as per Tamper / Wire Fault Recognition Options on page 41 (section 10.7).

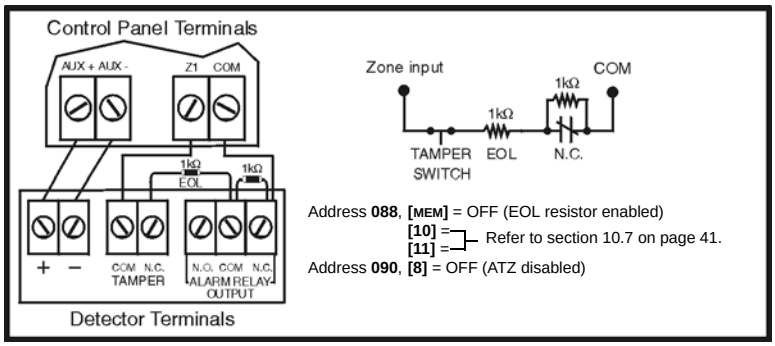
Figure 2.13: N.C. Contacts, without EOL Resistor, with Tamper Recognition



2.10.4 N.C. CONTACTS, WITH EOL RESISTOR, WITH TAMPER AND WIRE FAULT RECOGNITION (UL/ULC)

If your security installation requires tamper (cut) and wire fault (short) recognition, all detection devices must use normally closed contacts. Connect the devices and program the control panel as shown in figure 15. This setup will communicate an open or closed zone to the control panel, displaying open zones on the keypad. The control panel will also communicate any detected tampers (cuts) and/or wire faults (short) as per Tamper / Wire Fault Recognition Options on page 41 (section 10.7).

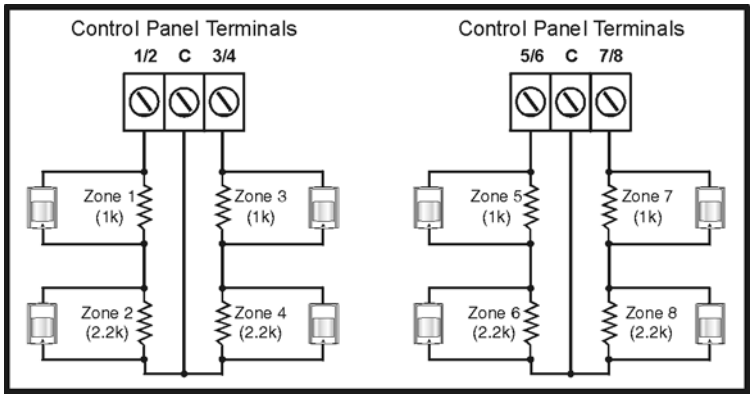
Figure 2.14: N.C. Contacts, with EOL Resistor, with Tamper and Wire Fault Recognition (UL/ULC)



2.11 ADVANCED TECHNOLOGY ZONE (ATZ) CONNECTIONS

Enabling the ATZ feature (see section 7.2 on page 29) allows you install two detection devices per input terminal, therefore, doubling zone capacity of the control panel. Advanced Technology Zoning is a software-oriented feature, there is no need for extra modules, simply install the devices as shown in Figure 2.16 to Figure 2.18 on page 12. The control panel will recognize the installed devices as shown in Figure 2.15. The extra zones function exactly like any other zone displaying zone status on the keypad and sending separate alarm codes for each zone. For more information on programming the options mentioned in the following sections refer to see ZONE DEFINITIONS on page 28.

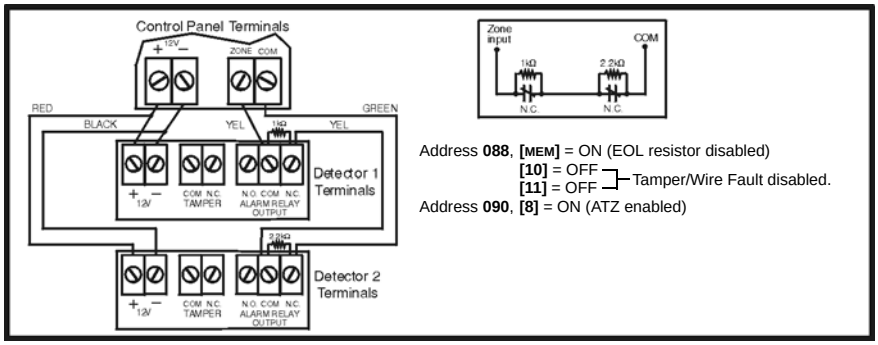
Figure 2.15: Zone Recognition with ATZ Enabled



2.11.1 N.C. CONTACTS, WITHOUT EOL RESISTOR

If your security installation does not require tamper or wire fault recognition but you are using the ATZ feature, connect the detection devices and program the control panel as shown in Figure 2.16 below. Do not use devices with normally open contacts, as this will cause the system to remain in alarm. This setup will communicate the status of each device to the control panel (see Figure 2.15 on page 11), displaying open zones on the keypad.

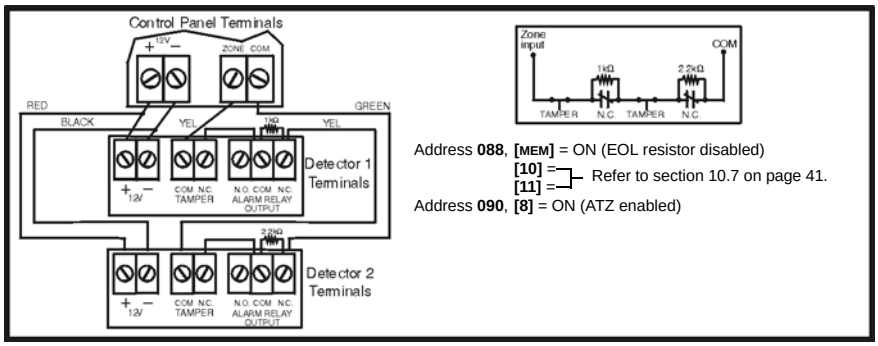
Figure 2.16: N.C. Contacts, without EOL Resistor



2.11.2 N.C. CONTACTS, WITHOUT EOL RESISTOR, WITH TAMPER RECOGNITION

If your security installation requires tamper recognition and you are using the ATZ feature, connect the detection devices and program the control panel as shown in Figure 2.17 below. Do not use devices with normally open contacts, as this will cause the zone to remain open. This setup will communicate the status of each zone to the control panel (see Figure 2.15 on page 11), displaying open zones on the keypad. The control panel will also communicate any detected tampers (cuts) on the system as per Tamper / Wire Fault Recognition Options on page 41 (section 10.7).

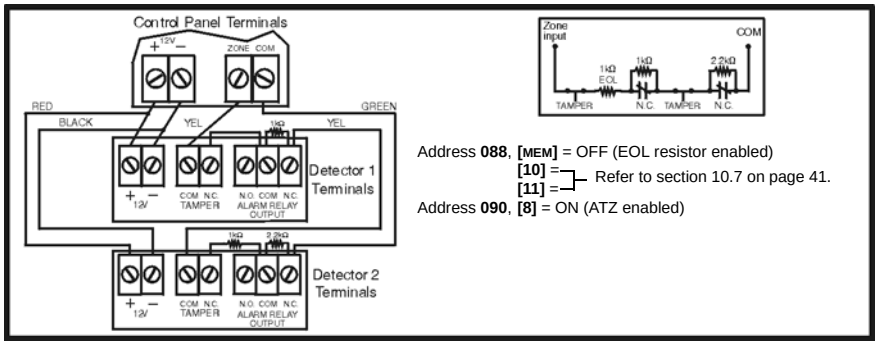
Figure 2.17: N.C. Contacts, without EOL Resistor, with Tamper Recognition



2.11.3 N.C. Contacts, With EOL Resistor, With Tamper & Wire Fault Recognition (UL/ULC)

If your system requires tamper (cut) and wire fault (short) recognition, connect two detection devices to one input terminal with a 1kΩ end of line (EOL) resistor and program the control panel as shown in Figure 2.18. Do not use devices with normally open contacts, this will cause the zone to remain open. This setup will communicate the status of each zone to the control panel (see Figure 2.18 below), displaying open zones on the keypad. Any tampers (cuts) and/or wire fault (shorts) detected on the system are communicated as per Tamper / Wire Fault Recognition Options on page 41 (section 10.7).

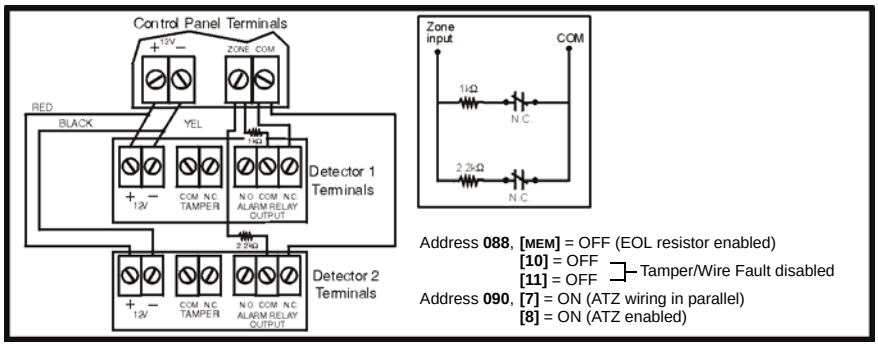
Figure 2.18: N.C. Contacts, with EOL Resistor, with Tamper and Wire Fault Recognition (UL/ULC)



2.11.4 ATZ Parallel Wiring

If your system is using the ATZ feature and requires the connection of two detection devices to one input to be in parallel, connect the devices and program the control panel as shown in Figure 2.19. Do not use devices with normally open contacts as this will cause the zone to remain open. This setup will communicate the status of each zone to the control panel (see Figure 2.19 below), displaying open zones on the keypad. For more information, see ATZ Parallel Wiring on page 29.

Figure 2.19: ATZ Parallel Wiring

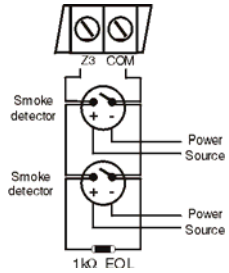


Address 090, key [7] (page 29) must be ON in order to connect the zones in parallel.

2.12 FIRE CIRCUIT

If your security installation requires the use of smoke detectors, define zone 3 as a "24-hour" fire zone; please refer to section 7.5 on page 29.

Figure 2.20:



2.12.1 Standard Installation

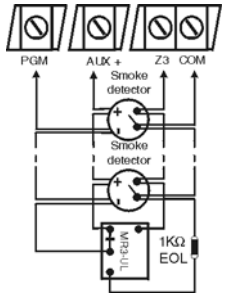
Connect the smoke detectors to zone 3 as shown in Figure 2.20. Note that a fire zone must use a 1kΩ EOL resistor. If there is a line short or if the smoke detector becomes active, whether the system is armed or disarmed, the control panel will generate an alarm. If the line is "open", the control panel will send a "fire loop" trouble report to the central station and trouble indicator, key **[11]**, will appear in the keypad's trouble display.

All smoke detectors must be connected using a daisy chain configuration.

2.12.2 UL/ULC INSTALLATION

For UL/ULC installations, use a 4-wire, latching, smoke detector (UL - Falcon Model 5454, ULC - BRK Model 2412). To supervise the power supply, install an "end of line" relay (Model MR3). Connect the smoke detectors and relay as shown in Figure 2.21. In the event power is interrupted the relay will cause a FIRE TROUBLE report to be generated (see section 7.5 on page 29).

Figure 2.21:



To reset (unlatch) the smoke detectors after an alarm, momentarily interrupt power to the detectors. To do so, verify that the negative (-) of the smoke detectors is connected to a PGM. Set the PGM for "Timed N.C." (normally closed), and program the PGM to "open" when any two keys on the keypad are pressed simultaneously. For more information on programming the PGM, see PGM (PROGRAMMABLE OUTPUT) on page 38.

*Example: To program the PGM to conduct a smoke detector reset when the **[CLEAR]** and **[ENTER]** keys are pressed at the same time (see PGM (PROGRAMMABLE OUTPUT) on page 38).*

*Address 039 = **[BYP] [2ND]***
*Address 040 = **[5] [10]***
*Address 042 = **[2ND] [6]***
*Address 056 = **[10] [10] [4]***

All smoke detectors must be connected using a daisy chain configuration.

2.12.3 SERIAL OUTPUT CONNECTOR

The four-pin Serial Output Connector is used to connect additional devices such as the 708DVACS communicator, the Esprint printing module and the SRI-18 PGM Expander Module to the control panel. To use the output connector, the PGM must be disabled. To disable the PGM, program **[2ND] [2ND]** into addresses 039, 040 and 042. For serial output connector specifications, refer to section 1.3 on page 3.

PART 3: ACCESS CODES

3.1 INSTALLER CODE

Streamline - Section 00 ⇨ Hexa Programming - Addresses 000 to 002

Default: 282828

Only the installer code allows you to program all control panel settings, except the Master and User codes. To program any setting in the control panel you must enter the programming mode by pressing the **[ENTER]** key followed by the installer code. The installer code contains six digits and each digit can be any value from 0 to 9. Although the control panel can accept 4-digit codes, when programming the installer code, always enter six digits. To change the installer code press:

[ENTER] + *Installer Code* + **[10] [10] [10]** + *First 2 digits* + **[10] [10] [1]** + *Next 2 digits* + **[10] [10] [2]** + *Final 2 digits* + **[ENTER]**

3.2 MASTER AND USER CODES

Default Master Code: 474747

You can not use the installer code to program the master and user codes. Only the master and user 1 codes can program these access codes (See section 11.1 on page 43).

3.3 USER / ACCESS CODE LENGTH

*Feature Select Programming ⇨ Address 088; Key **[9]***

Default: 6-digit Access Codes

When programming user codes an option for either 4-digit or 6-digit access codes can be programmed. When the 4-digit option is selected, entering a 4-digit code will allow the person access. Using the 6-digit option, entering 6 digits is required to allow access.

Key **[9]** "OFF": 6-digit Access Codes
Key **[9]** "ON": 4-digit Access Codes
[ENTER] + *Installer Code* + **[10] [8] [8]** + **[9]** *ON/OFF* + **[ENTER]** *twice*

3.4 DURESS

*Feature Select Programming ⇨ Address 090; Key **[10]***

Default: Duress Disabled

When unwillingly forced to disarm a system, a User can enter the User Code #48 instead of their usual code. This code will disarm the system and send a silent alert (Duress Code) to the Central.

Key **[10]** "OFF": Duress Disabled
Key **[10]** "ON": Duress Enabled
[ENTER] + *Installer Code* + **[10] [9] [10]** + **[10]** *ON/OFF* + **[ENTER]** *twice*

3.5 INSTALLER LOCK

Decimal Programming ⇨ Address 058

Default: Address Empty

Program 147 into address 058 to lock all programming. When the installer lock is enabled, the **STATUS** LED will flash and the dialer relay will make a clicking noise (made by the relay opening and closing) for 4 seconds during power up. Hence, performing a hardware reset (see section 10.12 on page 42) will not affect the current settings. To remove the installer lock, enter any value besides 147.

[ENTER] + *Installer Code* + **[10] [5] [8]** + **[1] [4] [7]** + **[ENTER]**

3.6 MASTER CODE LOCK

*Feature Select Programming ⇨ Address 090; Key **[BYP]***

Default: Disabled

This feature locks both the Master Code and User Code 1. With address 090 key **[BYP]** enabled, the Master Code and User Code 1 cannot be changed or deleted. With this feature enabled, the Master Code and User Code 1 can only be changed or deleted through Esploader or by disabling this feature.

[ENTER] + *Installer Code* + **[10] [9] [10]** + **[BYP]** *ON/OFF* + **[ENTER]**

PART 4: PROGRAMMING METHODS

The 728 Ultra control panels can be programmed using either the keypad or the Espload Software (V3.0 or higher). We highly recommend programming the control panels using the Espload Software, as it simplifies the process and reduces the potential of data entry errors. You can also program the control panels manually by using a keypad.

4.1 ESPLOAD SOFTWARE

With the Espload Software (V3.0 or higher), you can program the 728 Ultra control panels remotely via modem or locally using an ADP-1 adapter. The advanced Espload software can execute fast uploads or downloads and provides many powerful features. These include a comprehensive "monitoring" mode to oversee all panel activity, a "scheduler" to initiate pre-programmed tasks at set intervals, and a "batch" mode to carry out pre-programmed tasks following a call from the control panel. Using Espload there is no limit to the number of account files or panel defaults created and you can assign thousands of programming combinations to the PGM outputs. Espload can also be converted to the language of your choice. Contact your local Paradox Distributor for your free copy of the Espload software.

4.2 KEYPAD

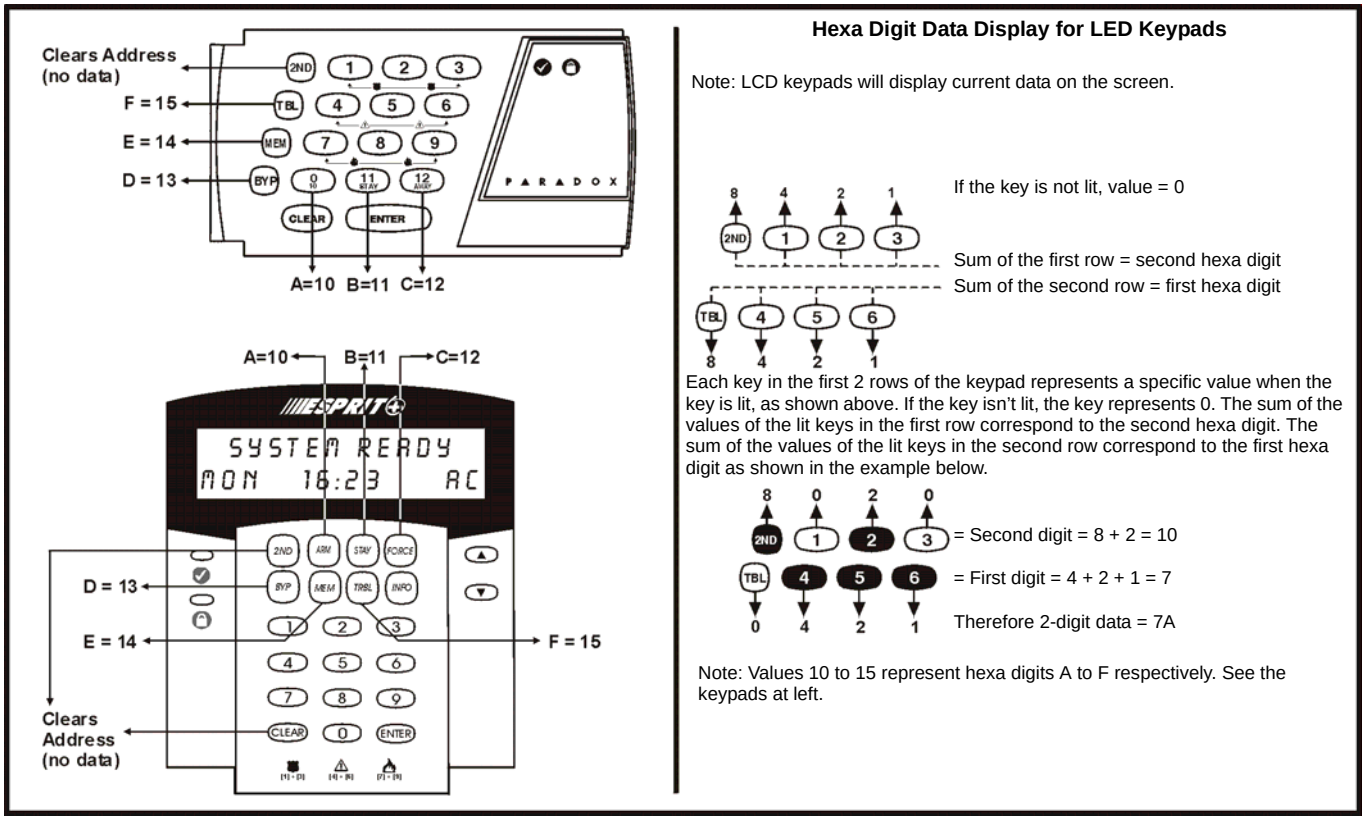
When programming, use the supplied "Programming Guide" to keep track of which addresses were programmed and how. Before you begin programming the control panel, we recommend you read Parts 5 through 11 of this manual in order to acquire a good understanding of the control panel and its many features. When programming with the keypad, certain addresses are programmed using different methods. These methods are described in detail below. Each section in this manual will reference the appropriate programming method.

4.2.1 HEXA PROGRAMMING

Addresses 000 to 043 and 300 to 527 are programmed using the Hexa Programming method. In this mode, you can enter any hexa-digit from 0 to F where keys **[1]** to **[9]** represent digits 1 to 9 respectively; the other keys represent hexa-digits A to F as shown in Figure 4.1. To program using the Hexa Programming method:

1. Press **[ENTER]** + Installer Code.
2. The **[ENTER]** key will flash indicating you are in programming mode.
3. Enter the desired 3-digit address.
4. The keypad will display the 2-digit data currently saved at this address as described in Figure 4.1.
5. Enter 2-digit data; after entering data you do not need to press enter, the software will automatically save the data into the selected address.
6. Return to step 2 to continue programming or press **[CLEAR]** to exit programming mode.

Figure 4.1: Hexa Programming


Clears Address (no data)
F = 15
E = 14
D = 13
A=10 B=11 C=12
PARADOX
A=10
B=11
C=12
SYSTEM READY
MON 16:23 AC
D = 13
E = 14
F = 15
Clears Address (no data)
Hexa Digit Data Display for LED Keypads
Note: LCD keypads will display current data on the screen.
If the key is not lit, value = 0
Sum of the first row = second hexa digit
Sum of the second row = first hexa digit
Each key in the first 2 rows of the keypad represents a specific value when the key is lit, as shown above. If the key isn't lit, the key represents 0. The sum of the values of the lit keys in the first row correspond to the second hexa digit. The sum of the values of the lit keys in the second row correspond to the first hexa digit as shown in the example below.
= Second digit = 8 + 2 = 10
= First digit = 4 + 2 + 1 = 7
Therefore 2-digit data = 7A
Note: Values 10 to 15 represent hexa digits A to F respectively. See the keypads at left.

4.2.2 HEXA STREAMLINED SECTION PROGRAMMING

This is an alternate method to Hexa Programming. The addresses (000 to 043 and 300 to 527) programmed in the Hexa Programming method are grouped into 67 sections where each section contains four addresses (i.e. section 00 = addresses 000 to 003). Using this method allows you to program 8 digits (4 addresses) without having to exit and re-enter addresses. When entering the final digit, the software will automatically advance to the next section.

*Example: If you complete the "Programming Guide" with the desired data, you can program the 68 sections by entering all digits without pressing **[ENTER]** or entering any other addresses. This greatly reduces programming time.*

Note: the keypad will not display the current data in the Hexa Streamlined Programming method. To program using the Hexa Streamlined Section method:

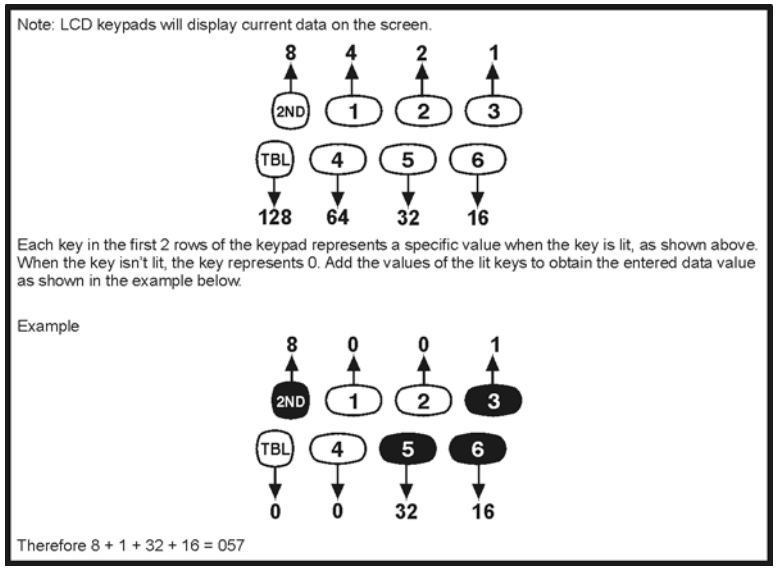
1. Press **[ENTER]** + Installer code + **[7]**.
2. The **[ENTER]** and **[2ND]** keys will flash to indicate you are in streamlined programming mode.
3. Enter 2-digit section (00 to 67).
4. The **[ENTER]** key will remain on and the **[2ND]** key will turn off.
5. Enter 8-digit data to program the section.
6. The keypad will "beep" to indicate that the section has been programmed, data is saved and the software has advanced to the next section.
7. Return to step 4 to continue programming or press **[CLEAR]** to exit programming mode.

4.2.3 DECIMAL PROGRAMMING

Addresses 044 to 061 are programmed using the Decimal Programming method. Values entered must contain three digits from 000 to 255 (where the **[10]** key = 0). To program using the Decimal Programming method:

1. Press **[ENTER]** + Installer Code.
2. The **[ENTER]** key will flash to indicate you are in programming mode.
3. Enter 3-digit address (044 to 061).
4. The keypad will now display the current 3-digit data currently saved at this address as described in Figure 4.2.
5. Enter 3-digit data (decimal) value; after entering data you do not need to press **[ENTER]**, the software will automatically save the data into the selected address.
6. Return to step 2 to continue programming or press **[CLEAR]** to exit programming mode.

Figure 4.2: Decimal Display For LED Keypads


Note: LCD keypads will display current data on the screen.
8 4 2 1
2ND 1 2 3
TBL 4 5 6
128 64 32 16
Each key in the first 2 rows of the keypad represents a specific value when the key is lit, as shown above. When the key isn't lit, the key represents 0. Add the values of the lit keys to obtain the entered data value as shown in the example below.
Example
8 0 0 1
2ND 1 2 3
TBL 4 5 6
0 0 32 16
Therefore 8 + 1 + 32 + 16 = 057

4.2.4 FEATURE SELECT PROGRAMMING

Addresses 062 to 126 are programmed using the Feature Select Programming method. In this method, every key in each address on the keypad represents an option or feature. Pressing a key will display it on the keypad and pressing it again will extinguish the key. The ON/OFF status of each key determines the selected feature. To program using the Feature Select Programming method:

1. Press **[ENTER]** + Installer Code.
2. The **[ENTER]** key will flash to indicate you are in programming mode.
3. Enter 3-digit address (062 to 126).
4. After entering the address, the keypad will display the feature selection status. The ON/OFF status of the keys determines the selected features as described in the "Programming Guide" and in the appropriate sections of this manual. Turn the keys ON/OFF by pressing the appropriate key until the desired options are set. Then press the **[ENTER]** key to accept, there will be a confirmation "beep" indicating the options have been accepted. The **[ENTER]** key will flash to indicate that the software is awaiting the next address entry.
5. Return to step 3 to continue programming or press **[CLEAR]** to exit programming mode.

PART 5: PANEL SETTINGS FOR ESPLOAD

5.1 PANEL ANSWER OPTIONS

Streamline - Section 00 ⇨ Hexa Programming - Address 003

Default: Answering Machine Override Disabled (Maximum 8 rings)

The following two options will define how the control panels answer an incoming call from a computer using the Espload software.

In order for the Espload software to remotely communicate with the control panel, call the installation site twice using the Espload Software. To do so, program the first digit in address 003 with any value from 1 to F (see Table 3 below), this value represents the delay period the control panel will wait between the first and second call. Using the Espload software, call the installation site and on the second ring press **[ENTER]** on the keyboard to hang-up. After hanging up, the Espload software will immediately call the installation site back. If the installation site is called back within the programmed delay period, the control panel will override the answering machine or service by picking-up on the first ring. To disable this option program **[2ND]** or **[1]** as the first digit in address 003.

*Example: A security installation is using an answering machine set to answer after 3 rings, the first digit at address 003 has been programmed with 5 (40 sec.) and the second digit has been programmed with 8. When you call the installation site with the Espload software the first time, wait two rings and press **[ENTER]** on the keyboard. The Espload software will immediately call the installation site back. If the second call is made within 40 seconds, the panel will pick up the line on the first ring. If it takes more than 40 seconds, the panel will not answer on the first ring and the answering machine will answer after three rings.*

Table 3: *Answering Machine Override Options*

[2ND] or **[1]** = Answering Machine Override disabled			
[2] = 16 seconds	**[4]** = 32 seconds	**[6]** = 48 seconds	**[8]** or **[TBL] / [TRBL]** = 60 seconds
[3] = 24 seconds	**[5]** = 40 seconds	**[7]** = 56 seconds	

[ENTER] + *Installer Code* + **[10] [10] [3]** + *1st digit + 2nd digit (01 to 15 rings)* + **[ENTER]**

The second digit represents the number of rings the control panel will wait before picking-up the line. If the line is not answered after the number of re-programmed rings, the control panel will answer the call. Note the control panel resets the "ring" counter every 64 seconds. Therefore, if someone or an answering machine answers a call before the number of pre-programmed rings has elapsed, the control panel will keep the number of rings in memory for 64 seconds. If you hang-up and call the installation site back within 64 seconds, the control panel will continue to count the number of rings from the first call. After reaching the total number of rings, the control panel will answer the call. The number of rings can be set from 1 to 15 by programming the second digit at address 003 with any hexa-digit from 1 to F. Program the second digit with **[2ND]** to disable this option.

*Example: Address 003 = **[2ND] [8]**. Using the Espload software, you call an installation site where there is no answering machine or service and no one is home. Since there is no one to answer the telephone call, the control panel will pick-up the line on the eighth ring. If someone happens to be home and answers the telephone, say, after three rings, the control panel will keep the three rings in memory for 64 seconds. If you hang-up and call back the installation site within 64 seconds the control panel will answer the call on the fifth ring. If you call back after 64 seconds the "ring" counter will have been reset and the control panel will answer the call on the eighth ring.*

If you program four or less rings, the control panel will always reset the counter.

5.2 PANEL IDENTIFIER

Streamline - Section 01 ⇨ Hexa Programming - Addresses 004 and 005

This four-digit code identifies the control panel to the Espload software before initiating upload. Program the same 4-digit code into the control panel and the Espload software before attempting to establish communication. If the codes do not match, the control panel will not establish communication. Enter any hexa digits from 0 to F.

[ENTER] + *Installer Code* + **[10] [10] [4]** + *First 2 digits* + **[10] [10] [5]** + *Final 2 digits* + **[ENTER]**

5.3 PC PASSWORD

Streamline - Section 01 ⇨ Hexa Programming - Addresses 006 and 007

This four-digit download password identifies the PC to the panel, before beginning the download process. Enter the same password into the Espload software and the control panel. If the passwords are not the same, Espload will not establish communication. Enter any hexa digits from 0 to F.

[ENTER] + *Installer Code* + **[10] [10] [6]** + *First 2 digits* + **[10] [10] [7]** + *Final 2 digits* + **[ENTER]**

5.4 COMPUTER TELEPHONE NUMBER

Streamline Section 02 and 03 ⇨ Hexa Programming - Address 008 to 015

The control panel will dial this telephone number when trying to initiate communication with the PC (see section 5.5 on page 18). There is no default telephone number and you can enter any number from 0 to 9 up to a maximum of 16 digits. If you would like to enter any special keys or functions refer to Table 5 on page 21. If the telephone number contains less than 16 digits, press the **[TBL] / [TRBL]** key to indicate the end of the telephone number.

[ENTER] + *Installer Code* + **[7]** + **[10] [2]** + *Telephone Number (if less than 16 digits press* **[TBL] / [TRBL]***)* + **[ENTER]**

5.5 CALL ESPLOAD

*Key Access Programming ⇨ key **[TBL] / [TRBL]***

The control panel will dial the telephone number entered at addresses 008 to 015 (see section 5.4 on page 18) in order to communicate with the Esload software. The control panel and the computer will verify that the Panel Identifier and the PC Password match before establishing communication (see section 5.2 and section 5.3 on page 17).

Press **[ENTER]** + *(Installer, Master or User 1 Code)* + **[TBL] / [TRBL]**

5.6 ANSWER ESPLOAD

*Key Access Programming ⇨ Key **[AWAY]***

By entering the code sequence listed below, you can manually force the control panel to answer any incoming calls from the Esload software. This option can also be used to perform an on-site upload/download by connecting your computer directly to the control panel using an ADP-1 line adapter and manually answering Esload from the control panel. In Esload go to:

Main Menu ⇨ Program Setup ⇨ Modem and Printer Configuration

Set "Dialing Condition" to "Blind Dial". Program the panel telephone number in Esload and follow the instructions on the ADP-1 adapter. When the computer has dialed press:

[ENTER] + *(Installer, Master or User 1 Code)* + **[AWAY]**

5.7 CANCEL COMMUNICATION

*Key Access Programming ⇨ Key **[STAY]***

Use the Installer Code to cancel all communication and erase any unreported events in the buffer until the next reportable event. Use the Master or User 1 code to cancel communication attempts with Esload.

[ENTER] + *(Installer, Master and User 1 Code)* + **[STAY]**

5.8 CALL BACK

*Feature Select Programming ⇨ Address 086; Key **[4]***

Default: Call Back Disabled

For additional security, when a PC using the Esload software attempts to communicate with the control panel, the control panel can hang-up and call the PC back in order to re-verify identification codes and re-establish communication. When the control panel answers the call, it will verify if the Panel ID and PC Passwords match and if they do, the control panel will hang-up and call the Esload software back. The Esload software will automatically go into "wait for dial tone", ready to answer when the control panel calls back. Please note the Computer Telephone Number (see section 5.4 on page 18) must be programmed in order to use the "Call Back" feature.

Key **[4]** "OFF": Call Back Disabled
Key **[4]** "ON": Call Back Enabled
[ENTER] + *Installer Code* + **[10] [8] [6]** + **[4]** *ON/OFF* + **[ENTER]** *twice*

5.9 AUTOMATIC EVENT BUFFER TRANSMISSION

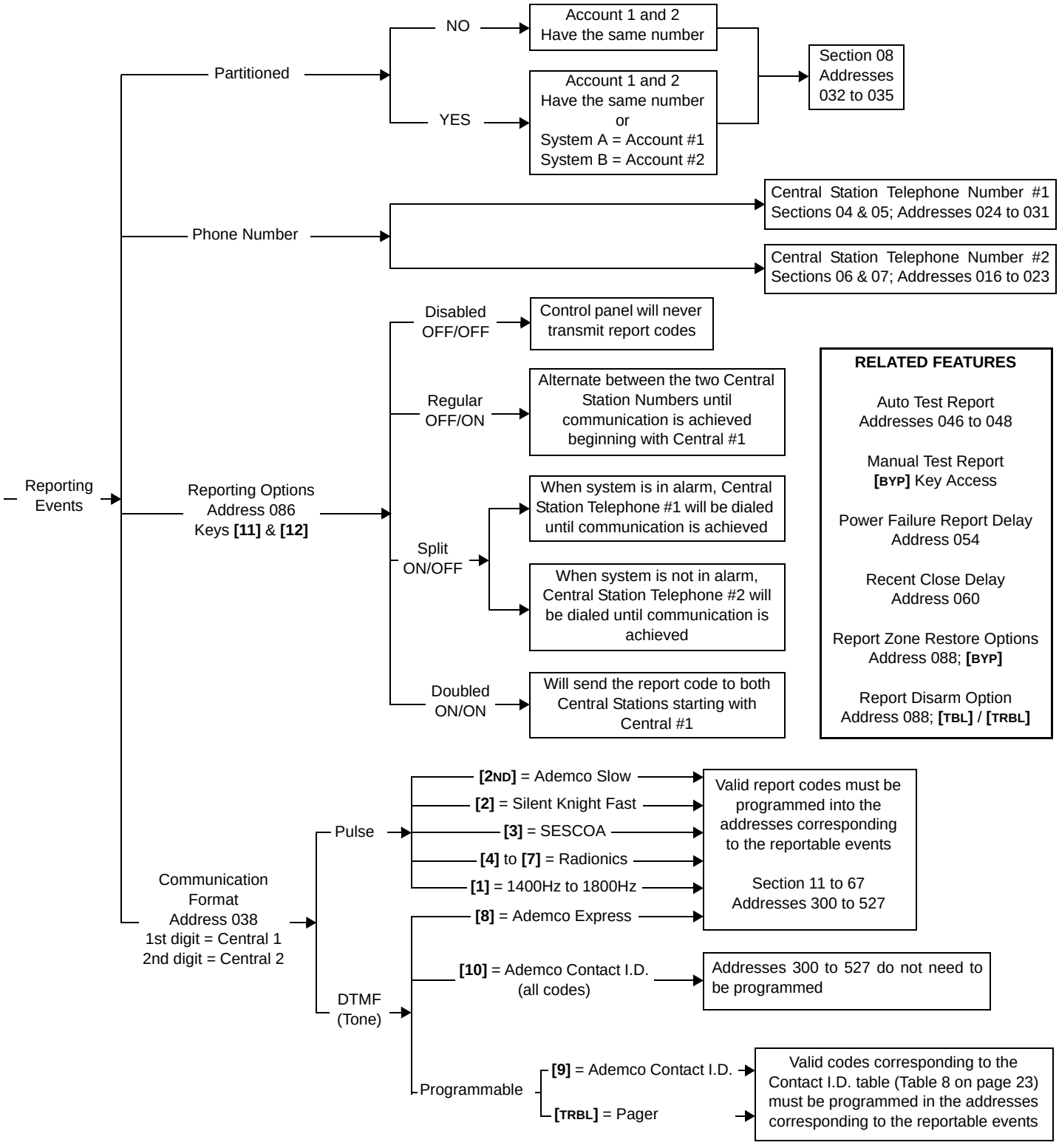
*Feature Select Programming ⇨ Address 088; Key **[2ND]***

Default: Automatic Event Buffer Transmission Disabled

When the event buffer reaches 50% capacity, the control panel will make two attempts to establish communication with a PC. The control panel will call the Computer Telephone Number (see section 5.4 on page 18) programmed at addresses 008 to 015. The Esload software must be in "wait for dial tone" mode. When the system establishes communication, it will upload the contents of the event buffer to the Esload software. If communication is interrupted before transmission of the complete contents of the buffer, or if after two attempts, communication is not established, the system will wait until the event buffer is full before attempting to re-communicate with Esload. When the Event Buffer is full, each subsequent new event will erase the oldest event in the buffer.

Key **[2ND]** "OFF": Automatic Event Buffer Transmission Disabled
Key **[2ND]** "ON": Automatic Event Buffer Transmission Enabled
[ENTER] + *Installer Code* + **[10] [8] [8]** + **[2ND]** *ON/OFF* + **[ENTER]** *twice*

Figure 6.1: Event Reporting


Reporting Events
Partitioned
NO
Account 1 and 2 Have the same number
YES
Account 1 and 2 Have the same number or System A = Account #1 System B = Account #2
Section 08 Addresses 032 to 035
Phone Number
Central Station Telephone Number #1 Sections 04 & 05; Addresses 024 to 031
Central Station Telephone Number #2 Sections 06 & 07; Addresses 016 to 023
Reporting Options Address 086 Keys [11] & [12]
Disabled OFF/OFF
Control panel will never transmit report codes
Regular OFF/ON
Alternate between the two Central Station Numbers until communication is achieved beginning with Central #1
Split ON/OFF
When system is in alarm, Central Station Telephone #1 will be dialed until communication is achieved
When system is not in alarm, Central Station Telephone #2 will be dialed until communication is achieved
Doubled ON/ON
Will send the report code to both Central Stations starting with Central #1
RELATED FEATURES
Auto Test Report Addresses 046 to 048
Manual Test Report [BYP] Key Access
Power Failure Report Delay Address 054
Recent Close Delay Address 060
Report Zone Restore Options Address 088; [BYP]
Report Disarm Option Address 088; [TBL] / [TRBL]
Communication Format Address 038 1st digit = Central 1 2nd digit = Central 2
Pulse
[2ND] = Ademco Slow
[2] = Silent Knight Fast
[3] = SESCOA
[4] to [7] = Radionics
[1] = 1400Hz to 1800Hz
Valid report codes must be programmed into the addresses corresponding to the reportable events
Section 11 to 67 Addresses 300 to 527
DTMF (Tone)
[8] = Ademco Express
[10] = Ademco Contact I.D. (all codes)
Addresses 300 to 527 do not need to be programmed
Programmable
[9] = Ademco Contact I.D.
[TRBL] = Pager
Valid codes corresponding to the Contact I.D. table (Table 8 on page 23) must be programmed in the addresses corresponding to the reportable events

6.1 REPORTING OPTIONS

*Feature Select Programming ⇨ Address 086; Keys **[11]** and **[12]***

Default: Reporting Disabled

When a specific event occurs in the system, the control panel will attempt to report the appropriate event code (if programmed) to the Central Station. The four available Reporting Options described in the table below, define where the event codes are reported. In order to establish communication with the Central Station the control panel will first access a telephone line and wait a maximum of 8 seconds for a dial tone. If a dial tone is recognized or if after 8 seconds there is no dial tone, the control panel will dial the appropriate Central Station Telephone Number as defined by the Reporting Options listed in the table below. If communication is established, the control panel will transmit the events in the event buffer to the Central Station. If communication fails during transmission, the control panel will dial the next central station telephone number, as defined by the reporting options listed below, and report only those events not reported during the interrupted attempt. For information on Reporting Event Codes see section 6.9 on page 25.

[ENTER] + *Installer Code* + **[10] [8] [6]** + **[11]** *and* **[12]** *ON/OFF* + **[ENTER]**

Table 4: *Reporting Options*

Key [11]	Key [12]	Reporting Feature
OFF	OFF	Reporting Disabled
OFF	ON	Regular Reporting
ON	OFF	Split Reporting
ON	ON	Double Reporting

6.1.1 REPORTING DISABLED

The Control Panel will never transmit any event codes to the central station.

6.1.2 REGULAR REPORTING

Using regular reporting the event codes are reported to the central station using either telephone number 1 or 2. The control panel will begin by dialing central station telephone number 1. If communication fails, the dialer will hang up, wait a predetermined period and dial central station telephone number 2. This sequence will repeat 4 times, switching back and forth between the 1st and 2nd number (see Figure 6.2 on page 21) until communication is established. After eight unsuccessful attempts, the redial sequence ends and a "communicator report failure" will appear in the keypad's trouble display (key **[7]** "ON"). When the next event occurs (reportable or non-reportable), the control panel will begin the dialing sequence again.

6.1.3 SPLIT REPORTING

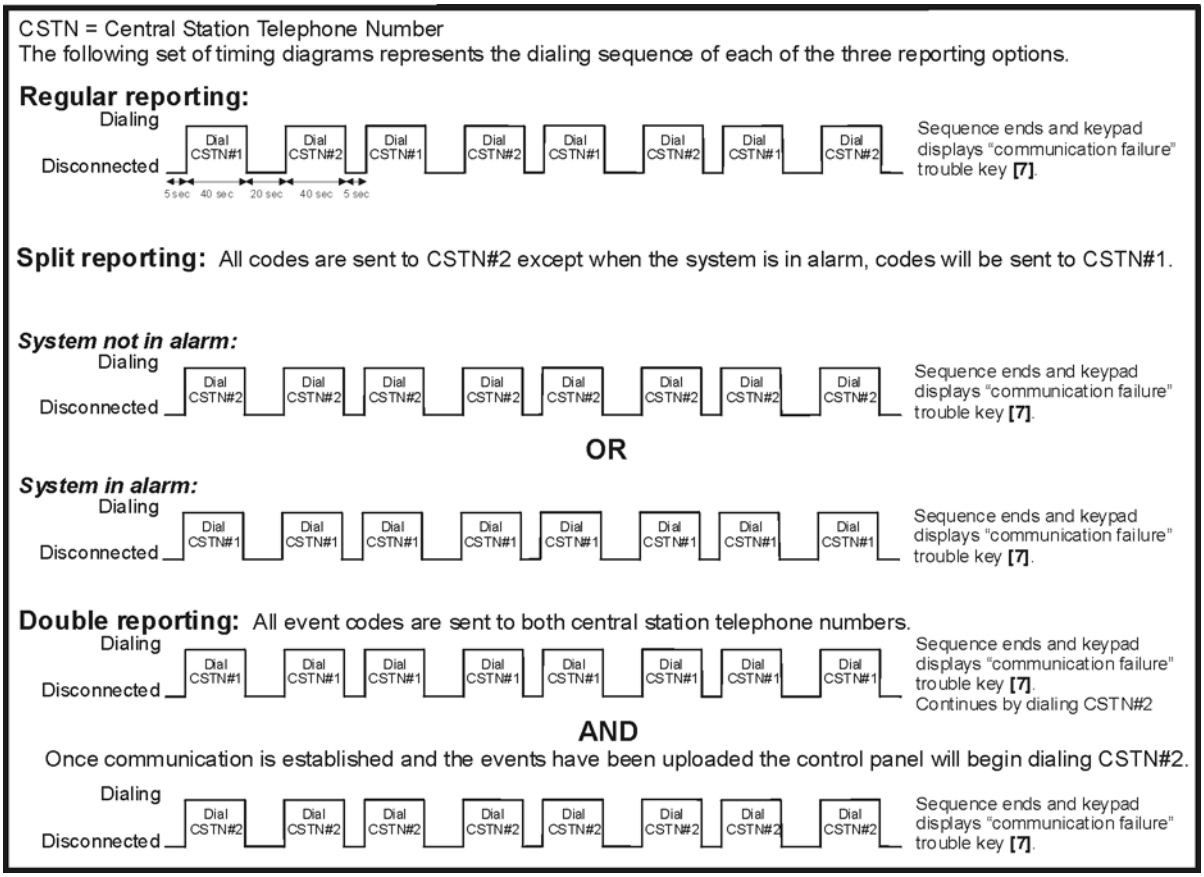
When the system is not in alarm, the control panel will report all Event Codes to Central Station Telephone 2. If communication fails, the dialer will hang-up, wait a predetermined period and dial the number again. The control panel will dial the number eight times until communication is established (see Figure 6.2 on page 21). After eight unsuccessful attempts, the redial sequence ends and a "communicator report failure" will appear in the keypad's trouble display (key **[7]** "ON"). When the next event occurs (reportable or non-reportable), the control panel will begin the dialing sequence again.

When the system is in alarm, the control panel will report all Event Codes to Central Station Telephone 1. Any ongoing communication (upload/download or reporting to Telephone 2) will stop immediately and the panel will dial Telephone 1. If communication fails, the dialer will hang-up, wait a predetermined period and dial the number again. The control panel will dial the number eight times until communication is established (see Figure 6.2 on page 21). After eight unsuccessful attempts, the redial sequence ends and a "communicator report failure" will appear in the keypad's trouble display (key **[7]** "ON"). When the next event occurs (reportable or non-reportable), the control panel will begin the dialing sequence again.

6.1.4 DOUBLE REPORTING

In double reporting, the control panel will report each event code to both central station telephone numbers. The control panel will begin by attempting communication with central station telephone 1 and if communication fails, the dialer will hang-up, wait a predetermined period and dial the number again. The control panel will dial the number eight times until communication is established (see Figure 6.2 on page 21). After eight unsuccessful attempts, the redial sequence ends and a "communicator report failure" will appear in the keypad's trouble display (key **[7]** "ON"). If communication has been established and the event codes transmitted or if after eight attempts communication has not been established, the control panel will report the same Event Codes to Central Station Telephone 2.

Figure 6.2: Reporting Options


CSTN = Central Station Telephone Number
The following set of timing diagrams represents the dialing sequence of each of the three reporting options.
Regular reporting:
Dialing
Disconnected
Dial CSTN#1
Dial CSTN#2
5 sec
40 sec
20 sec
40 sec
5 sec
Sequence ends and keypad displays "communication failure" trouble key [7].
Split reporting: All codes are sent to CSTN#2 except when the system is in alarm, codes will be sent to CSTN#1.
System not in alarm:
Dial CSTN#2
System in alarm:
Dial CSTN#1
OR
Double reporting: All event codes are sent to both central station telephone numbers.
Continues by dialing CSTN#2
AND
Once communication is established and the events have been uploaded the control panel will begin dialing CSTN#2.

6.2 CENTRAL STATION TELEPHONE NUMBER 1

Streamline - Section 04 and 05 ⇨ Hexa Programming - Addresses 016 to 023

The control panel will dial the programmed telephone number when reporting an event code to the central station computer (see Reporting Options on page 20). For example, if the alarm system is armed and a zone with a motion detector opens, the control panel may dial the telephone number in order to send the programmed event code to the central station computer. There is no default telephone number and you can enter any number from 0 to 9 up to a maximum of 16 digits. If you would like to enter any special keys or functions, refer to Table 5 below. If the telephone number contains less than 16 digits, press the **[TBL] / [TRBL]** key to indicate the end of the telephone number.

[ENTER] + *Installer Code* + **[7]** + **[10] [4]** + *Telephone Number* + **[ENTER]** *or* **[TBL] / [TRBL]** *if number is less than 16 digits*

6.3 CENTRAL STATION TELEPHONE NUMBER 2

Streamline - Section 06 and 07 ⇨ Hexa Programming - Addresses 024 to 031

The control panel can communicate with two central station numbers. The control panel may at times dial the second number depending on the selected Reporting Options (see section 6.1 on page 20). If the central station does not have a second number, you must enter the same number as the first. There is no default telephone number and you can enter any number from 0 to 9 up to a maximum of 16 digits. If you would like to enter any special keys or functions refer to Table 5 below. If the telephone number contains less than 16 digits, press the **[TBL] / [TRBL]** key to indicate the end of the telephone number.

[ENTER] + *Installer Code* + **[7]** + **[10] [6]** + *Telephone Number* + **[ENTER]** *or* **[TBL] / [TRBL]** *if number is less than 16 digits*

Table 5: *Telephone Number Special Instruction*

Enter special instructions in the telephone numbers using these keys:			
[10]	= the number "0"	**[BYP]**	= switch from pulse to tone while dialing
[11]	= *****	**[MEM]**	= pause 4 seconds
[12]	= #	**[TBL] / [TRBL]**	= end of telephone number

Both Central Station Telephone Numbers must be programmed in order for event reporting to function properly.

6.4 SYSTEM ACCOUNT CODES

Streamline - Section 08 ⇨ Hexa Programming - Addresses 032 to 035

All report codes are preceded by a 3- or 4-digit system account code to ensure correct identification to the central station, identifying from which security system the event originated. For example, if a zone opens, the control panel will first send the account code followed by the appropriate report code. In a partitioned system, the control panel can send a separate account code for each system. This will identify to the central station from which partition the report code originated. To do so, program a different number into each account code. Where account code #1 will represent “System A" and account code #2 will represent “System B".

If partitioning is disabled, program the same value for both account numbers.

There are no defaults and you can enter any hexa digit from 0 to F. Please note if required, system account codes can have 3 digits. To do so, press the **[2ND]** key followed by the 3-digit account number.

[ENTER] + *Installer Code* + **[7]** + **[10] [8]** + *4-digit Account Code #1 + 4-digit Account Code #2* + **[ENTER]**

[ENTER] + *Installer Code* + **[7]** + **[10] [8]** + **[2ND]** + *3-digit Account Code #1* + **[2ND]** *3-digit Account Code #2* + **[ENTER]**

6.5 COMMUNICATOR FORMATS

Streamline - Section 09 ⇨ Hexa Programming - Address 038

Default: Ademco Slow for both numbers

The following option will determine which format the control panel will use to communicate with the Central Station. You can select a different communicator format for each Central Station Telephone Number. Using Table 6, select the appropriate communication format. The first digit represents the Communication Format for Central Station Telephone Number 1 and the second digit represents the Communication Format for Central Station Telephone Number 2. Below you will find a brief description of all available Communicator Formats.

[ENTER] + *Installer Code* + **[10] [3] [8]** + *First digit = (Central Station Telephone #1) + Second digit = (Central Station Telephone #2)* + **[ENTER]**

Table 6: *Communicator Formats*

Key		Key	
[2ND]	= **ADEMCO** slow (1400Hz, 1900Hz, 10bps)	**[6]**	= **RADIONICS** with PARITY (1400Hz, 40Bps)
[1]	= (1400Hz, 1800Hz, 10bps)	**[7]**	= **RADIONICS** with PARITY (2300Hz, 40Bps)
[2]	= **SILENT KNIGHT** fast (1400Hz, 1900Hz, 20bps)	**[8]**	= *** ADEMCO** express
[3]	= **SESCOA** (2300Hz, 1800Hz, 20bps)	**[9]**	= *** ADEMCO** contact ID (programmable codes)
[4]	= **RADIONICS** (40Bps with 1400Hz handshake)	**[10]**	= *** ADEMCO** contact ID (all codes)
[5]	= **RADIONICS** (40Bps with 2300Hz handshake)	**[TBL]**	= *** PAGER FORMAT** - (personal dialing)
			* = 4-digit account codes only

6.5.1 ADEMCO CONTACT ID (ALL CODES)

Please note that this format must use a 4-digit system account code (see section 6.4 on page 22). Ademco Contact ID is a fast communicator format that uses tone transmission instead of pulse transmission. This communicator format also uses a pre-defined list of industry standard messages and event codes that should suit most of your basic installation needs. Using the "All Codes" format, the control panel will automatically generate the Contact ID event codes (see Table 7 below) for every event in addresses 300 to 527. Therefore, you do not need to program addresses 300 to 527.

Table 7: *Contact ID Event Codes*

System Event	Event Code Addresses	Contact ID Message	Contact ID Code #
Alarms / Restores	400 to 447	Burglary Zone #	130
Alarm / Restore on Zone 3 if “24hr.”	403, 426	Fire Alarm	110
Arm / Disarm	301 to 349 / 351 to 399	Open / Close By User #	401
Zone Shutdown	448 to 471	Burglary Bypass #	573
Zone Tamper	472 to 495	Sensor Tamper	383
Zone Tamper Reset	510	Sensor Tamper	383
Auxiliary Power Trouble	496 and 504	System Trouble	300
Bell Disconnect / Max. Current Trouble	497 and 505	Bell 1 Trouble	321
Low Battery	498 and 506	Low System Battery	302
AC Fail	499 and 507	AC Loss	301
Fire Loop Trouble	500 and 508	Fire Loop Trouble	373

Table 7: *Contact ID Event Codes*

Timer Loss / Timer Programmed	501 and 509	Time / Date Reset	625
TLM Trouble Restore	511	Telco 1 Fault	351
Test Report	512	Periodic Test	602
Panic #1 (keys 1 and 3)	513	Panic Alarm	120
Panic #2 (keys 4 and 6)	514	Medical	100
Panic #3 (keys 7 and 9)	515	Fire Alarm	110
Duress	520	Duress	121
Late to Close or No Movement	516 and 517	Late to Open / Close	404
Partial Arming	518	Bypass	570
Recent Close	519	Open / Close	400
Espload Log-In	524	Remote Access	410
Program Change	525	Program Changed	306
Closing Delinquency	521	System Inactivity	654

6.5.2 ADEMCO CONTACT ID (PROGRAMMABLE CODES)

Please note that this format must use a 4-digit system account code (see section 6.4 on page 22). Ademco Contact ID is a fast communicator format that uses tone transmission instead of pulse transmission. Use the Ademco Contact event list of industry standard messages and event codes found in Table 8 on page 23 to program the desired event codes into addresses 300 to 527.

Enter FF to program the default Ademco Contact ID report code when using the Ademco Contact ID (programmable codes) report format.

Table 8: *Programmable Contact ID Event Codes*

All addresses from **300** to **527** (sections 11 to 67) programmed with values other than **[2ND] [2ND]** will report the contact ID codes corresponding to the values programmed. Values to be programmed should be selected from this table.

CID	Reporting Code	Prog. Value	CID	Reporting Code	Prog. Value
100:	AUXILIARY ALARM	**[2ND] / [1]**	300:	SYSTEM TROUBLE	**[2] / [2]**
110:	FIRE ALARM	**[2ND] / [2]**	301:	AC LOSS	**[2] / [3]**
111:	FIRE SMOKE	**[2ND] / [3]**	302:	LOW SYSTEM BATTERY	**[2] / [4]**
112:	COMBUSTION	**[2ND] / [4]**	305:	SYSTEM RESET	**[2] / [5]**
113:	WATER FLOW	**[2ND] / [5]**	306:	PROGRAM CHANGED	**[2] / [6]**
114:	HEAT	**[2ND] / [6]**	309:	BATTERY TEST FAIL	**[2] / [7]**
115:	PULLSTATION	**[2ND] / [7]**	320:	SOUNDER/RELAY TROUBLE	**[2] / [8]**
116:	DUCT	**[2ND] / [8]**	321:	BELL 1 TROUBLE	**[2] / [9]**
117:	FLAME	**[2ND] / [9]**	323:	ALARM RELAY TROUBLE	**[2] / [10]**
118:	NEAR ALARM	**[2ND] / [10]**	350:	COMMUNICATION TROUBLE	**[2] / [11]**
120:	PANIC ALARM	**[2ND] / [11]**	351:	TELCO 1 FAULT	**[2] / [12]**
121:	DURESS	**[2ND] / [12]**	354:	FAIL TO COMMUNICATE	**[2] / [BYP]**
122:	SILENT PANIC	**[2ND] / [BYP]**	370:	PROTECTION LOOP TROUBLE	**[2] / [MEM]**
123:	AUDIBLE PANIC	**[2ND] / [MEM]**	371:	PROTECTION LOOP OPEN	**[2] / [TRBL]**
130:	BURGLARY	**[2ND] / [TRBL]**	372:	PROTECTION LOOP SHORT	**[3] / [2ND]**
131:	PERIMETER BURGLARY	**[1] / [2ND]**	373:	FIRE LOOP TROUBLE	**[3] / [1]**
132:	INTERIOR BURGLARY	**[1] / [1]**	382:	SENSOR TROUBLE	**[3] / [2]**
133:	24HR BURGLARY	**[1] / [2]**	383:	SENSOR TAMPER	**[3] / [3]**
136:	BURGLARY OUTDOOR	**[1] / [3]**	400:	OPEN / CLOSE	**[3] / [4]**
137:	BURGLARY TAMPER	**[1] / [4]**	401:	OPEN / CLOSE BY USER #	**[3] / [5]**
138:	BURGLARY NEAR ALARM	**[1] / [5]**	402:	GROUP OPEN / CLOSE	**[3] / [6]**
140:	GENERAL ALARM	**[1] / [6]**	403:	AUTOMATIC OPENING / CLOSING	**[3] / [7]**
150:	24 HOUR AUXILIARY	**[1] / [7]**	404:	LATE TO OPEN / CLOSE	**[3] / [8]**
151:	GAS DETECTED	**[1] / [8]**	407:	REMOTE ARM DOWNLOAD	**[3] / [9]**
152:	REFRIGERATION	**[1] / [9]**	410:	REMOTE ACCESS	**[3] / [10]**
153:	LOSS OF HEAT	**[1] / [10]**	441:	OPEN / CLOSE - STAY MODE	**[3] / [11]**
154:	WATER LEAKAGE	**[1] / [11]**	570:	BYPASS	**[3] / [12]**
155:	FOIL BREAK ALARM	**[1] / [12]**	572:	24 HOUR ZONE BYPASS	**[3] / [BYP]**
156:	DAY TROUBLE ALARM	**[1] / [BYP]**	573:	BURGLARY BYPASS #	**[3] / [MEM]**
157:	LOW GAS LEVEL	**[1] / [MEM]**	574:	GROUP BYPASS	**[3] / [TRBL]**
158:	HIGH TEMPERATURE	**[1] / [TRBL]**	601:	MANUAL TEST	**[4] / [2ND]**
159:	LOW TEMPERATURE	**[2] / [2ND]**	602:	PERIODIC TEST	**[4] / [1]**
161:	LOSS AIR FLOW	**[2] / [1]**	625:	TIME / DATE RESET	**[4] / [2]**
			654:	SYSTEM INACTIVITY	**[4] / [3]**

6.5.3 ADEMCO EXPRESS

This high-speed reporting format communicates 2-digit (00 to FF) events programmed at addresses 300 to 527 at a speed of 2 seconds per event. Unlike other Ademco formats, the Contact ID Event Codes are not used. Please note this format must use a 4-digit system account code (see section 6.4 on page 22).

6.5.4 PAGER REPORTING FORMAT

Using this format allows the control panel to transmit report codes to a pager or a cellular telephone. Since the control panel cannot confirm whether the transmission was successful or not (no handshake), after dialing, it can be programmed to transmit data to the pager or cellular telephone immediately or transmit data after a programmed pager delay has elapsed (section 6.6 on page 24). The account number and the report code are included with each call. For more information, see section 6.7 on page 24 and section 6.8 on page 25. Use the Ademco Contact event list of industry standard messages and event codes found in Table 8 on page 23 to program the desired event codes into addresses 300 to 527.

Enter FF to program the default Ademco Contact ID report code when using the Pager report format.

6.5.5 STANDARD PULSE FORMATS

The control panel supports the following pulse reporting formats (see Table 6 on page 22): Ademco slow, Silent Knight, Sescoa, and Radionics.

6.6 PAGER DELAY

Streamline - Sections 09 ⇨ Hexa Programming - Address 037 (1st Digit)

When using the Pager Reporting Format (see section 6.5.4 on page 24) and depending on the Pager Format Transmission Options (see section 6.7 on page 24), after dialing, the Pager Delay will either represent the amount of time that the Pager Format will wait before transmitting data or the amount of time that the data will be continuously transmitted. Enter **[2ND]** or **[1]** to **[F]** to program a value from 8 seconds to 120 seconds. Refer to Table 9 on page 24 for the Pager Delay Values.

Table 9: *Pager Delay Values*

Key		Key	
[2ND] OR [1]	= 8 seconds	**[9]**	= 72 seconds
[2]	= 16 seconds	**[A]**	= 80 seconds
[3]	= 24 seconds	**[B]**	= 88 seconds
[4]	= 32 seconds	**[C]**	= 96 seconds
[5]	= 40 seconds	**[D]**	= 104 seconds
[6]	= 48 seconds	**[E]**	= 112 seconds
[7]	= 56 seconds	**[F]**	= 120 seconds
[8]	= 64 seconds		

6.7 PAGER FORMAT TRANSMISSION OPTIONS

*Feature Select Programming ⇨ Address 090; Key **[MEM]***

Default: Follow Pager Delay

The Pager Reporting Format can be configured to transmit immediately or to transmit after a pager delay has elapsed. Enable address 090 key **[MEM]** to immediately transmit (personal dialing) the report code(s) to a pager or cellular telephone. The Pager Delay in address 037 will then become the amount of time that the control panel will continue to transmit the report code(s) to a pager or cellular telephone. Disable address 090 key **[MEM]** to configure the control panel to transmit the report code(s) to a pager or cellular telephone only after the Pager Delay (see Pager Delay on page 24) has elapsed.

Key **[MEM]** "OFF": Pager Report Format follows Pager Delay
Key **[MEM]** "ON": Pager Report Format transmits immediately (personal dialing)
[ENTER] + *Installer Code* + **[10] [9] [10]** + **[MEM]** *ON/OFF* + **[ENTER]**

At least one report format in address 038 must set to the Pager format to use the Pager Format Transmission Options feature.

6.8 PAGER REPORT EVENT OPTION

*Feature Select Programming ⇨ Address 090; Key **[TRBL]***

Default: Report alarm events only

The Pager Reporting Format can be configured to transmit alarm events only or all events. Enable address 090 key **[TRBL]** to transmit all events to a pager or cellular telephone. Disable address 090 key **[TRBL]** to transmit only alarm events to a pager or cellular telephone.

Key **[TRBL]** "OFF": Report alarm events only
Key **[TRBL]** "ON": Report all events
[ENTER] + *Installer Code* + **[10] [9] [10]** + **[TRBL]** *ON/OFF* + **[ENTER]**

6.9 REPORTING EVENT CODES

Streamline - Sections 11 to 67 ⇨ Hexa Programming - Addresses 300 to 527

An Event Code is a 2-digit hexadecimal value, consisting of numbers from 00 to FF. Each address between 300 and 527 represents a specific event, as described below and in the "Programming Guide". When an event occurs in the system, the control panel will attempt to transmit the 2-digit Event Code programmed at the corresponding address to the central station. The method of Event Code transmission is dependent on the Communicator Formats (see section 6.5 on page 22) and the Reporting Options (see section 6.1 on page 20).

Note: You do not need to program addresses 300 to 527 if using the Ademco Contact I.D. (all codes) format. If you plan to program most of the event code addresses, we suggest you use the Hexa Streamlined Section Programming Method as described in section 4.2.2 on page 16. Otherwise, use the Hexa Programming Method as described in section 4.2.1 on page 15.

6.9.1 ARMING CODES

Streamline - Sections 11 to 23 ⇨ Hexa Programming - Addresses 300 to 349

Whenever the system is armed, the control panel will send the programmed event code to the Central Station identifying who or how the system was armed.

6.9.2 DISARMING CODES

Streamline - Sections 23 to 35 ⇨ Hexa Programming - Addresses 350 to 399

Whenever the system is disarmed, the control panel will send the programmed event code to the Central Station identifying who disarmed the system.

6.9.3 ALARM CODES

Streamline - Section 36 to 38 ⇨ Hexa Programming - Addresses 400 to 409

Whenever an alarm occurs, the control panel will send the programmed event code to the Central Station identifying which zone generated an alarm.

6.9.4 RESTORE CODES

Streamline - Sections 42 to 44 ⇨ Hexa Programming - Addresses 424 to 433

The control panel will send the programmed event code to the Central Station as soon as the zone closes after having generated an alarm or as soon as the zone closes after bell cut-off. For more information, please see Report Zone Restore Options in section 6.14 on page 27.

6.9.5 ZONE SHUTDOWN CODES

Streamline - Sections 48 to 50 ⇨ Hexa Programming - Addresses 448 to 457

If the Auto Zone Shutdown (see section 7.11.1 on page 31) feature is enabled, the control panel will send the programmed event code to the Central Station identifying which zones were shutdown.

6.9.6 TAMPER CODES

Streamline - Sections 54 and 55 ⇨ Hexa Programming - Addresses 472 to 478

If the Tamper/Wire Fault Recognition Options are disabled (see section 10.7 on page 41), the control panel will never transmit these event codes. Otherwise, whenever a tamper occurs on a zone, the control panel will send the programmed Event Code to the Central Station. With Advanced Technology Zoning (ATZ) enabled (see section 7.2 on page 29) each Tamper Code address will represent two zones (e.g. Tamper 1 = zones 1 & 2, Tamper 2 = zones 3 & 4, etc.). The control panel will send the programmed Event Code when a tamper occurs on either zone.

Table 10: *Tamper/Trouble Zone Recognition*

Without ATZ		**With ATZ**	
[472] -	Tamper 1 = Input 1 / Zone 1	**[472] -**	Tamper 1 = Input 1 / Zones 1 and 2
[473] -	Tamper 2 = Input 2 / Zone 2	**[474] -**	Tamper 2 = Input 2 / Zones 3 and 4
[474] -	Tamper 3 = Input 3 / Zone 3	**[476] -**	Tamper 3 = Input 3 / Zones 5 and 6
[475] -	Tamper 4 = Input 4 / Zone 4	**[478] -**	Tamper 4 = Input 4 / Zones 7 and 8

6.9.7 TROUBLE / TROUBLE RESTORE CODES

Streamline - Sections 60 to 63 ⇨ Hexa Programming - Addresses 496 to 511

Each of the these addresses represent a specific trouble or restore condition. The control panel will report the appropriate event code to the central station when one of the following conditions occurs or after the condition has returned to normal.

496 - Max. Auxiliary Current: the current draw from auxiliary is greater than or equal to 650A.
504 - Max. Auxiliary Current Restore
497 - Bell Disconnect/Max. Bell Current: Bell is disconnected or Bell current is greater than or equal to 3A.
505 - Bell Disconnect Restore: No restore code for bell current.
498 - Battery Disconnect/Low Voltage: Battery disconnected or battery voltage less than or equal to 10.5V.
506 - Battery Disconnect/Low Voltage Restore
499 - Power Failure: Voltage on AC input is less than or equal to 12.5V.
507 - Power Failure Restore
500 - Fire Loop Trouble: A tamper occurs on a fire zone (Zone 3/24hr.).
508 - Fire Loop Trouble Restore
501 - Timer Loss: The control panel detects a loss in the panel timer.
509 - Timer Programmed
502 & 503 - Reserved for Future Use
510 - All Tamper/Trouble Codes (see section 6.9.6 on page 25) have returned to "normal".
511 - TLM Trouble Restore: Telephone line has restored after the TLM (see section 10.1 on page 40) has detected the loss of a telephone line.

6.9.8 SPECIAL CODES

Streamline - Sections 64 to 67 ⇨ Hexa Programming - Addresses 512 to 527

Each address represents a special condition in the system. When one of these special conditions occur, the control panel will report the event code associated with the address.

512 - Test Report: The test report has been activated either manually (see section 6.11 on page 27) or automatically (see section 6.10 on page 26).
513 - Panic 1: Keys **[1]** and **[3]** are pressed to activate a Panic 1 alarm
514 - Panic 2: Keys **[4]** and **[6]** are pressed to activate a Panic 2 alarm
515 - Panic 3: Keys **[7]** and **[9]** are pressed to activate a Panic 3 alarm
For more information on Keypad Panic Options see section 10.4 on page 40.
516 - Late To Close: "Timed" Auto Arming is enabled (see section 8.1 on page 34) and the system has not automatically armed itself at the specified time.
517 - No Movement: "No Movement" Auto Arming is enabled (see section 8.2 on page 34) and no movement has occurred for the designated amount of time.
518 - Partial Arming: Whenever the system is "Away" armed, "Stay" armed, or armed while one or more zones are bypassed.
519 - Recent Close: An alarm occurs shortly after the system has been armed, refer to Recent Close Delay in section 6.13 on page 27.
520 - Duress: The Duress feature is enabled (see section 3.4 on page 14) and a User disarms the system using the User Code #48.
521- Closing Delinquency: When the last time the system was armed is greater than the programmed Closing Delinquency Timer (section 8.13 on page 36).
524 - Log-In (Esploid): Esploid software is used to communicate with the Control Panel.
525 - Program Change: The installer code is used to enter the programming mode
522 & 523 - Reserved for Future Use
526 & 527 - Reserved for Future Use

6.10 AUTO TEST REPORT

Decimal Programming ⇨ Addresses 046 to 048 ***(Default: Auto Test Report Disabled)***
Feature Select Programming ⇨ Address 090; Key ***[3] (Default: OFF)***

The report code programmed at address 512 will be reported to the central station after a specified time has elapsed. Depending on whether address 090 key **[3]** is ON or OFF, this specified time can be in days or hours. Also note that if **[2ND]** is programmed at address 512 nothing will be reported.

Address 090 Key ***[3]*** *OFF:* The Auto Test report will be transmitted after the number of days programmed at address 046 and the time programmed at address 047 (hours) and 048 (minutes) has elapsed. To disable this feature, program 000 at address 046.

[ENTER] + *Installer Code* + **[10] [4] [6]** + *3 digits (days)* + **[10] [4] [7]** + *3 digits (hours)* + **[10] [4] [8]** + *3 digits (minutes)* + **[ENTER]**

Address 090 Key ***[3]*** *ON:* The time programmed in address 046 is changed from days to hours and address 047 will be ignored. The Auto Test report will be transmitted after the number of hours programmed at address 046 and the minutes programmed at address 048 have elapsed.

*Example: 002 and 030 are programmed at addresses 046 and 048 respectively. With address 090 key **[3]** ON, the Auto Test report will be transmitted at the 30th minute of every 2nd hour.*

6.11 MANUAL TEST REPORT

*Key Access Programming ⇨ Key **[BYP]***
Activating the manual test report will send the Event Code programmed at address 512 to the Central Station.

[ENTER] + *(Installer, Master or User 1 Code)* + **[BYP]** + **[ENTER]**

6.12 POWER FAILURE REPORT DELAY

Decimal Programming ⇨ Address 054
Default: 30 minutes
After a power failure, the control panel will delay transmission of the event code programmed at address 499 by the period programmed at this address (001 to 255 minutes).

[ENTER] + *Installer Code* + **[10] [5] [4]** + *3-digit decimal value (001 to 255)* + **[ENTER]**

6.13 RECENT CLOSE DELAY

Decimal Programming ⇨ Address 060
Default: Recent Close Delay Disabled
The system will transmit the recent close event code programmed at address 519 if after arming the system, an alarm occurs within the period programmed at this address (001 to 255 minutes). Program 000 into address 060 to disable this feature.

[ENTER] + *Installer Code* + **[10] [6] [10]** + *3-digit decimal value (001 to 255)* + **[ENTER]**

6.14 REPORT ZONE RESTORE OPTIONS

*Feature Select Programming ⇨ Address 088; Key **[BYP]***
Default: Zone Restore Codes Transmit on Bell Cut-Off
With the **[BYP]** key "OFF", the report codes programmed at addresses 424 to 447 (see Restore Codes in section 6.9.4 on page 25) will only transmit if the zone has returned to normal after bell cut-off (see section 8.11 on page 36). With the **[BYP]** key "ON", the codes will transmit as soon as the zone returns to normal (zone closure).

Key **[BYP]** "OFF": Report on Bell Cut-Off
Key **[BYP]** "ON": Report on Zone Closure
[ENTER] + *Installer Code* + **[10] [8] [8]** + **[BYP]** *ON/OFF* + **[ENTER]**

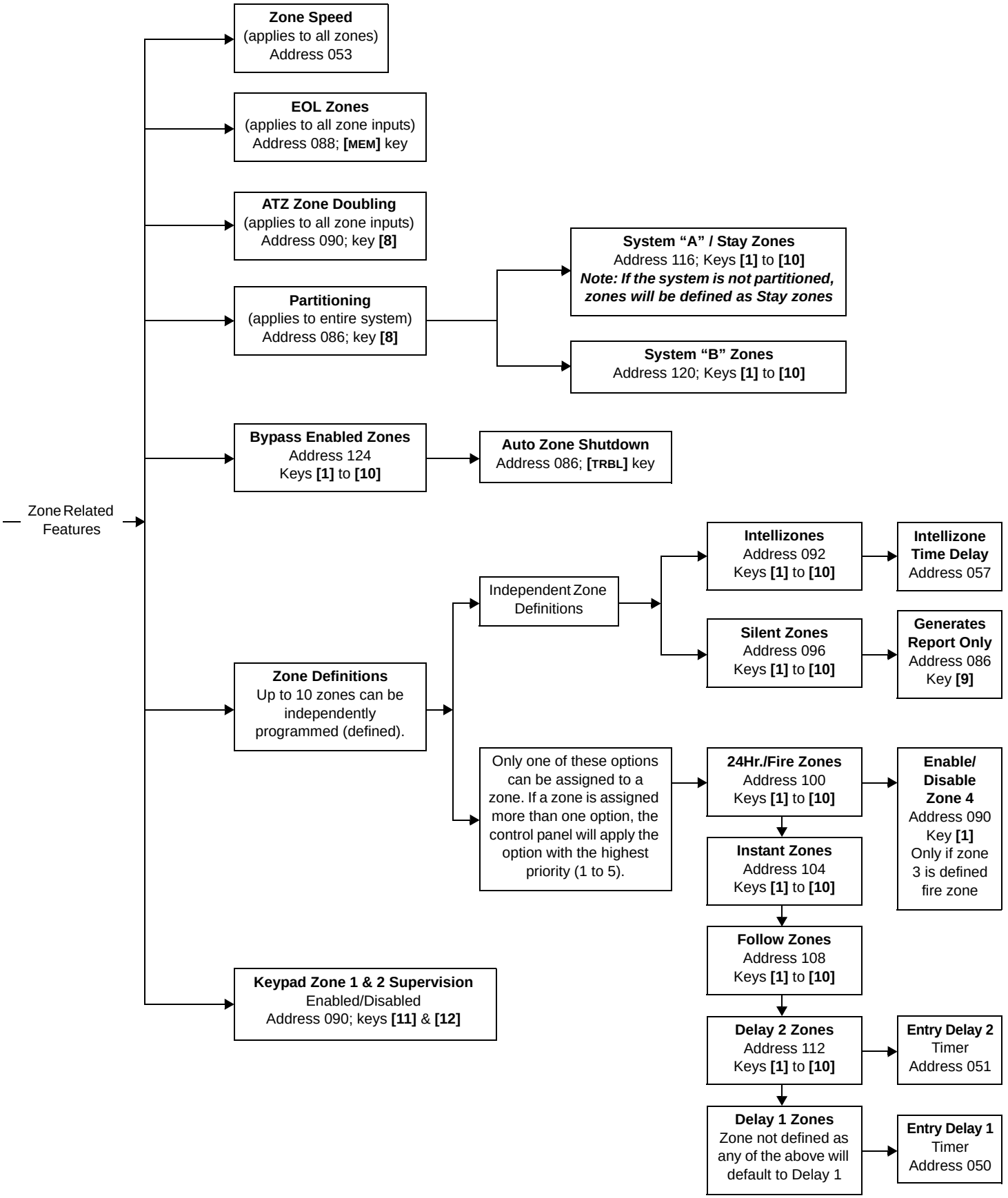
6.15 REPORT CODE DISARMING OPTIONS

*Feature Select Programming ⇨ Address 088; Key **[TBL] / [TRBL]***
Default: Disarming Codes Transmit on User Disarming
With the **[TBL] / [TRBL]** key "OFF", the Disarming Codes programmed at addresses 350 to 399 (see section 6.9.2 on page 25) will transmit whenever a User disarms the system. With the **[TBL] / [TRBL]** key "ON", the control panel will transmit these codes when a User disarms a system in alarm.

Key **[TBL]** "OFF": Always Report Disarm
Key **[TBL]** "ON": Report Disarm Only After Alarm
[ENTER] + *Installer Code* + **[10] [8] [8]** + **[TBL] / [TRBL]** *ON/OFF* + **[ENTER]**

PART 7: ZONE DEFINITIONS

Figure 7.1: Zone Related Features


Zone Related Features
Zone Speed
(applies to all zones)
Address 053
EOL Zones
(applies to all zone inputs)
Address 088; [MEM] key
ATZ Zone Doubling
(applies to all zone inputs)
Address 090; key [8]
Partitioning
(applies to entire system)
Address 086; key [8]
System "A" / Stay Zones
Address 116; Keys [1] to [10]
Note: If the system is not partitioned, zones will be defined as Stay zones
System "B" Zones
Address 120; Keys [1] to [10]
Bypass Enabled Zones
Address 124
Keys [1] to [10]
Auto Zone Shutdown
Address 086; [TRBL] key
Zone Definitions
Up to 10 zones can be independently programmed (defined).
Independent Zone Definitions
Intellizones
Address 092
Keys [1] to [10]
Intellizone Time Delay
Address 057
Silent Zones
Address 096
Keys [1] to [10]
Generates Report Only
Address 086
Key [9]
Only one of these options can be assigned to a zone. If a zone is assigned more than one option, the control panel will apply the option with the highest priority (1 to 5).
24Hr./Fire Zones
Address 100
Keys [1] to [10]
Enable/ Disable Zone 4
Address 090
Key [1]
Only if zone 3 is defined fire zone
Instant Zones
Address 104
Keys [1] to [10]
Follow Zones
Address 108
Keys [1] to [10]
Delay 2 Zones
Address 112
Keys [1] to [10]
Entry Delay 2
Timer
Address 051
Delay 1 Zones
Zone not defined as any of the above will default to Delay 1
Entry Delay 1
Timer
Address 050
Keypad Zone 1 & 2 Supervision
Enabled/Disabled
Address 090; keys [11] & [12]

7.1 ZONE SPEED

Decimal Programming ⇨ Address 053

Default: 600mS

The zone speed applies to all zones whether the system is armed or disarmed. The zone speed defines how quickly the control panel will respond to an open zone. The control panel will not display and/or respond to an open zone until the programmed zone speed elapses. All other zone definitions and options do not come into effect until the zone speed has elapsed. The zone speed can be set from 15ms to 3.8s (001 to 255 X 15ms). This feature prevents any momentary glitches in the system from causing an alarm or unnecessary reporting.

Example: The system is armed and the zone speed is set for 1.2 seconds. A zone opens and closes in less than 1.2 seconds the control panel will not respond (i.e. no reporting, no alarm and no display on keypad).

[ENTER] + *Installer Code* + **[10] [5] [3]** + *3 digit decimal value (001 to 255)* + **[ENTER]**

7.2 ADVANCED TECHNOLOGY ZONING (ATZ)

*Feature Select Programming ⇨ Address 090; Key **[8]***

Default: ATZ Disabled

Enabling the ATZ feature allows you to install two detection devices per zone input. Each detection device will have its own zone number and each will transmit a separate alarm code that will display on the keypad. For information on how to connect the detection devices and how the panel recognizes them, please refer to section 2.11 on page 11.

Key **[8]** "OFF": ATZ Disabled
Key **[8]** "ON": ATZ Enabled
[ENTER] + *Installer Code* + **[10] [9] [10]** + **[8]** *ON/OFF* + **[ENTER]**

7.2.1 ATZ PARALLEL WIRING

*Feature Select Programming ⇨ Address 090 Key **[7]***

Default: Disabled (Wiring in series)

Enable this feature to connect ATZ zones in parallel with the zone input. For more information, see ATZ Parallel Wiring on page 12. Enable address 090 key **[7]** to set ATZ wiring to parallel. Disable address 090 key **[7]** to set ATZ wiring to series.

[ENTER] + *Installer Code* + **[10] [9] [10]** + **[7]** *ON/OFF* + **[ENTER]**

7.3 INTELLIZONES

*Feature Select Programming ⇨ Addresses 092 and 094; Keys **[1]** to **[12]***

If an alarm condition occurs on a zone identified as Intellizone, the control panel will trigger a timer and will not generate an alarm until one of the following conditions occurs within a specified period (see section 7.3.1 Intellizone Time Delay):

- An alarm condition occurs on another zone during intellizone time delay.
- The zone that is in alarm has restored and re-occurred during intellizone time delay.
- The zone that is in alarm remains in alarm the entire intellizone time delay.

Note: Intellizone timer will only begin after the zone speed period has elapsed (see section 7.1 on page 29).

Do not use the Intellizone feature on zones programmed with any Entry Delay. An alarm may occur when disarming the system.

7.3.1 INTELLIZONE TIME DELAY

Decimal Programming ⇨ Address 057

Default: 48 seconds

You can set the Intellizone Time Delay between 010 and 255 seconds. Before an Intellizone can generate an alarm, one of three conditions must occur during this time delay (see section 7.3).

[ENTER] + *Installer Code* + **[10] [5] [7]** + *3-digit decimal value (010 to 255)* + **[ENTER]**

7.4 SILENT ZONES

*Feature Select Programming ⇨ Addresses 096 and 098; Keys **[1]** to **[12]***

Using the "Feature Select Programming Method" (section 4.2.4 on page 16), select which zones will be defined as Silent Zones. If an alarm occurs on a Silent Zone, the control panel will report the alarm (see EVENT REPORTING on page 19) to the central station without triggering any bells and/or sirens. ***Note: If zone 3 is defined as 24 hour (fire zone), the control panel will generate an audible alarm, overriding a silent zone definition.***

7.5 "24 HOUR" AND FIRE ZONES

*Feature Select Programming ⇨ Addresses 100 and 102; Keys **[1]** to **[12]***

Using the "Feature Select Programming Method" (section 4.2.4 on page 16), select which zones will be defined as 24 hour Zones. **Keypad zones should not be defined as 24 hour Zones.** Regardless of the system's armed status, an open "24hr"

zone will always generate an alarm. If zone 3 is defined as "24 hour", it becomes a "Fire Zone". Connect the smoke detectors as described in section 2.12 on page 12. An open "Fire Zone" will generate the following:

- The panel will send a fire loop trouble report (if programmed at address 500) to the Central.
- A trouble indicator, key **[11]**, and a fire zone indicator, key **[3]**, will flash on the keypad.
- Alarms will generate an intermittent output signal, regardless of the system's current arming status.
- Alarms are always audible, regardless of other settings.

7.5.1 ZONE 4 (ENABLE/DISABLE)

*Feature Select Programming ⇨ Address 090; Key **[1]***

Default: Zone 4 Enabled

If the ATZ feature is enabled and zone 3 has been set as a fire zone, zone 4 must be disabled if it is not going to be used.

Key **[1]** "OFF": Zone 4 Enabled
Key **[1]** "ON": Zone 4 Disabled
[ENTER] + *Installer Code* + **[10] [9] [10]** + **[1]** *ON/OFF* + **[ENTER]**

7.6 INSTANT ZONES

*Feature Select Programming ⇨ Addresses 104 and 106; Keys **[1]** to **[12]***

Using the "Feature Select Programming Method" (section 4.2.4 on page 16), select which zones will be defined as Instant Zones. If an "Instant" zone opens, the control panel will immediately generate an alarm after the "Zone Speed" has elapsed.

7.7 FOLLOW ZONES

*Feature Select Programming ⇨ Addresses 108 and 110; Keys **[1]** to **[12]***

Using the "Feature Select Programming Method" (section 4.2.4 on page 16), select which zones will be defined as Follow Zones. Follow zones function as follows:

- If a follow zone opens and no entry delay zones have been triggered; the control panel will immediately generate an alarm after the zone speed has elapsed.
- If a follow zone opens during another zone's entry delay period, the control panel will wait until the end of the entry delay period before generating an alarm.
- If a follow zone opens when more than one entry delay zone has been triggered, the panel will wait until the end of the entry delay zone that opened first before generating an alarm.

7.8 ENTRY DELAY 1

Decimal Programming ⇨ Address 050

Default: 45 seconds

Any zone that has not been identified as either Instant Zones, Follow Zones, Entry Delay 2, or "24 Hour" and Fire Zones will automatically default to Delay 1. You can program the Delay 1 period between 001 and 255 seconds into address 050. If a zone defined as Delay 1 opens in an armed system, the control panel will wait the pre-programmed period before generating an alarm. This provides the users the time required to disarm the system when entering the protected area.

[ENTER] + *Installer Code* + **[10] [5] [10]** + *3-digit decimal value (001 to 255)* + **[ENTER]**

7.9 ENTRY DELAY 2

*Feature Select Programming ⇨ Addresses 112 and 114; Keys **[1]** to **[12]***

Using the "Feature Select Programming Method" (section 4.2.4 on page 16), select which zones will be defined as Entry Delay 2 Zones. If a zone defined as Delay 2 opens in an armed system, the control panel will wait the Entry Time Delay 2 (section 7.9.1) period before generating an alarm. This provides the users the time required to disarm the system when entering the protected area.

7.9.1 ENTRY TIME DELAY 2

Decimal Programming ⇨ Address 051

Default: 45 seconds

This applies to all zones defined as Entry Delay 2 (see section 7.9). You can program the delay between 001 and 255 seconds.

[ENTER] + *Installer Code* + **[10] [5] [1]** + *3-digit decimal value (001 to 255)* + **[ENTER]**

7.10 PARTITIONING

*Feature Select Programming ⇨ Address 086; Key **[8]***

Default: Disabled

This feature divides the alarm system into two distinct systems, identified as "System A" and "System B". You can assign each zone to System A, System B, both systems, or neither system. Partitioning works as follows:

- Zones assigned to System A, will arm/disarm when the system is "System A Armed/Disarmed".
- Zones assigned to System B, will arm/disarm when the system is "System B Armed/Disarmed".
- Zones assigned to both systems ("dual area") will arm when the system is either "System A Armed", "System B Armed" or when both systems are armed and will disarm only when both systems disarm.
- Zones not identified to any system ("common area") will arm only when the system is both "System A Armed" and "System B Armed" and will only disarm when at least one of the two systems disarms.

For more information on arming and disarming partitions, see section 11.5 on page 44. Also see Code Priority in section 8.12 on page 36.

7.10.1 "SYSTEM A" / STAY ZONES

*Feature Select Programming ⇨ Addresses 116 and 118; Keys **[1]** to **[12]***

Using the "Feature Select Programming Method" (section 4.2.4 on page 16), select which zones will be assigned to "System A" or if the system isn't partitioned which zones will be identified as Stay Zones. For details on "System A" zones refer to Partitioning above. For details on Stay Arming see section 11.4 on page 43.

7.10.2 "SYSTEM B" ZONES

*Feature Select Programming ⇨ Address 120 and 122; Keys **[1]** to **[12]***

Using the "Feature Select Programming Method" (section 4.2.4 on page 16), select which zones will be assigned to "System B". For details on "System B" zones refer to Partitioning above.

7.11 BYPASS ENABLED ZONES

*Feature Select Programming ⇨ Addresses 124 and 126; Keys **[1]** to **[12]***

Using the "Feature Select Programming Method" (section 4.2.4 on page 16), select which zones will be defined as Bypass Enabled. Only zones defined as bypass enabled can be used for Manual Zone Bypassing (see section 11.9 on page 45) or during Auto Zone Shutdown (see section 7.11.1).

7.11.1 AUTO ZONE SHUTDOWN

*Feature Select Programming ⇨ Address 086; Key **[TBL] / [TRBL]***

Default: Auto Zone Shutdown Disabled

The control panel will automatically bypass any "Bypass Enabled Zones" which initiate 5 consecutive alarms in the same-armed period. Therefore, the zone will no longer generate an alarm. After the control panel has bypassed a zone, it will report an event code to the Central Station if programmed at addresses 448-461.

This feature is also a function of the Report Zone Restore Options (see section 6.14 on page 27). If this option is set for report zone restore on bell cut-off, the zone will only be bypassed after the bell or siren has cut-off 5 consecutive times in the same armed period. While if the option is set for report zone on zone closure, the zone will be bypassed when the zone has opened and closed 5 consecutive times in one armed period.

Key **[TBL] / [TRBL]** "OFF": Auto Zone Shutdown Disabled
Key **[TBL] / [TRBL]** "ON": Auto Zone Shutdown Enabled
[ENTER] + *Installer Code* + **[10] [8] [6]** + **[TBL] / [TRBL]** *ON/OFF* + **[ENTER]**

7.12 EOL ZONES (ENABLED/DISABLED)

*Feature Select Programming ⇨ Address 088; Key **[MEM]***

Default: Enabled

If the system requires the use of 1kΩ end of line resistors on zone input terminals, enable this feature (see Zone Connections in section 2.8 on page 7 to section 2.10 on page 9).

Key **[MEM]** "OFF": Input Zones use EOL Resistors
Key **[MEM]** "ON": Input Zones do not use EOL Resistors
[ENTER] + *Installer Code* + **[10] [8] [8]** + **[MEM]** *ON/OFF* + **[ENTER]**

7.13 KEYPAD ZONE 1 SUPERVISION

*Feature Select Programming ⇨ Address 090; Key **[11]***

Default: Disabled

When using a keypad defined as keypad zone 1, enable this feature. When enabled, the control panel will verify the presence of a keypad and the keypad zone. For more information see Keypad Zone Connections in section 2.8 on page 7.

Key **[11]** "OFF": Keypad Zone 1 Disabled
Key **[11]** "ON": Keypad Zone 1 Enabled
[ENTER] + *Installer Code* + **[10] [9] [10]** + **[11]** *ON/OFF* + **[ENTER]**

7.14 KEYPAD ZONE 2 SUPERVISION

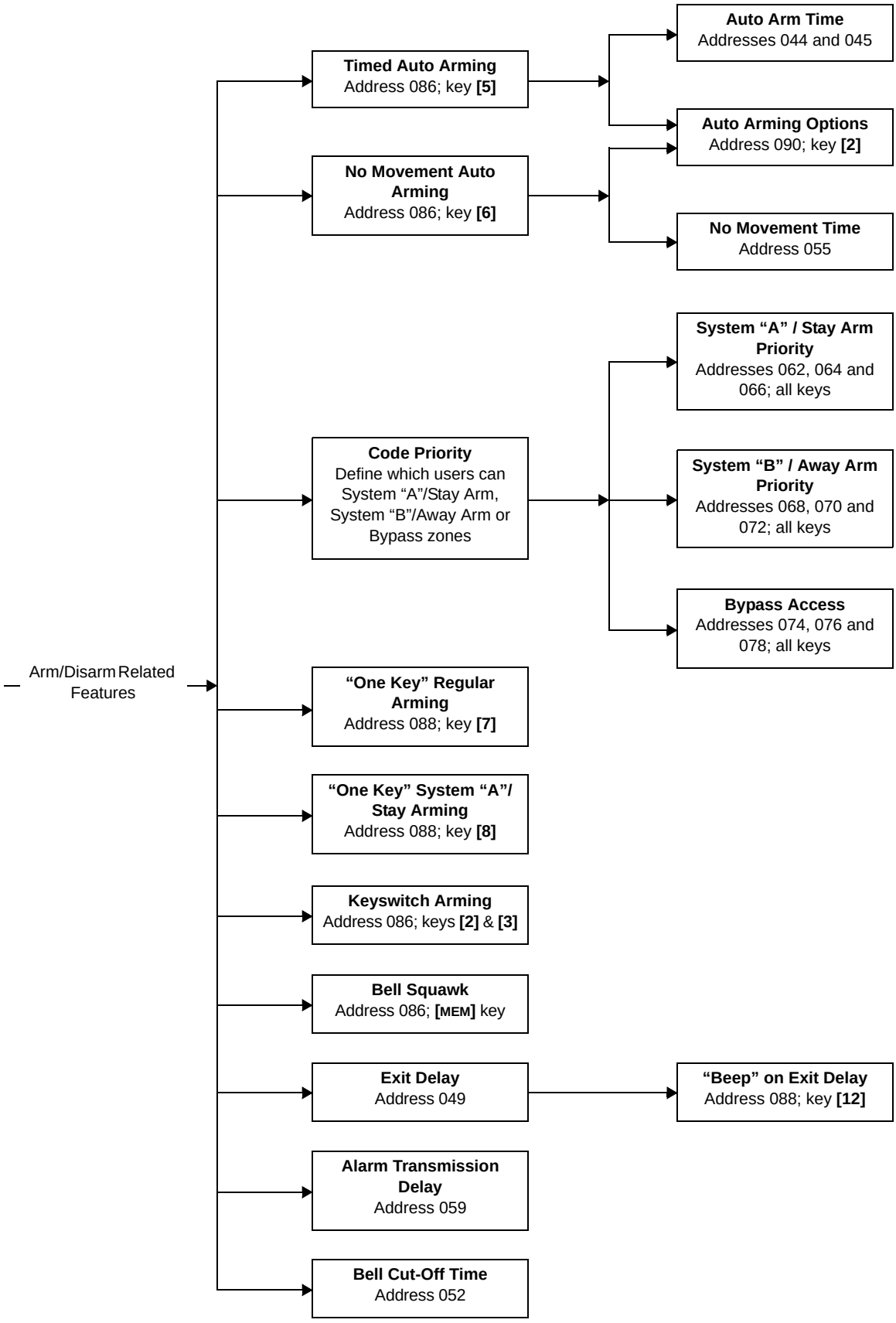
*Feature Select Programming ⇨ Address 090; Key **[12]***

Default: Disabled

When using a keypad defined as keypad zone 2, enable this feature. When enabled, the control panel will verify for the presence of a keypad and the keypad zone. For more information see Keypad Zone Connections in section 2.8 on page 7.

Key **[12]** "OFF": Keypad Zone 2 Disabled
Key **[12]** "ON": Keypad Zone 2 Enabled
[ENTER] + *Installer Code* + **[10] [9] [10]** + **[12]** *ON/OFF* + **[ENTER]**

Figure 8.1: Arming/Disarming Related Features


Arm/Disarm Related Features
Timed Auto Arming
Address 086; key [5]
Auto Arm Time
Addresses 044 and 045
Auto Arming Options
Address 090; key [2]
No Movement Auto Arming
Address 086; key [6]
No Movement Time
Address 055
Code Priority
Define which users can System "A"/Stay Arm, System "B"/Away Arm or Bypass zones
System "A" / Stay Arm Priority
Addresses 062, 064 and 066; all keys
System "B" / Away Arm Priority
Addresses 068, 070 and 072; all keys
Bypass Access
Addresses 074, 076 and 078; all keys
"One Key" Regular Arming
Address 088; key [7]
"One Key" System "A"/ Stay Arming
Address 088; key [8]
Keyswitch Arming
Address 086; keys [2] & [3]
Bell Squawk
Address 086; [MEM] key
Exit Delay
Address 049
"Beep" on Exit Delay
Address 088; key [12]
Alarm Transmission Delay
Address 059
Bell Cut-Off Time
Address 052

8.1 "TIMED" AUTO ARMING

*Feature Select Programming ⇨ Address 086; Key **[5]***
Default: "Timed" Auto Arming Disabled
The alarm system will automatically arm itself at a specified time everyday. Note, as with regular arming, the system will not arm if a zone is open and will report a "late to close" to the central. If this occurs, the system will not arm until the next day. The type of arming is dependent on the Auto Arming Options (see section 8.1.2 on page 34). Program the Auto Arm Time as described below.

8.1.1 AUTO ARM TIME

The control panel will automatically arm itself at the specified time if "Timed" Auto Arming (see above) is enabled. The time is programmed using the 24-hour clock (i.e. 8:00PM = 20:00). There are two methods of programming the "Auto Arm Time" as described below.

Decimal Programming ⇨ Addresses 044 and 045
Program the "Auto Arm Time" in hours into address 044 and the "Auto Arm Time" in minutes into address 045.
[ENTER] + *Installer Code* + **[10] [4] [4]** + *3-digit decimal value (hours)* + **[10] [4] [5]** + *3-digit decimal value (minutes)* + **[ENTER]**

*Key Access Programming ⇨ Key **[9]***
The User 1, Master, or Installer can program the "Auto Arm Time" using this method.
[ENTER] + *(Installer, Master or User 1 Code)* + **[9]** + *2 digits representing hours + 2 digits representing minutes* + **[ENTER]**

8.1.2 AUTO ARMING OPTIONS

*Feature Select Programming ⇨ Address 090; Key **[2]***
Default: Regular Arming
The "Auto Arm" feature will arm the system as described in Table 11 below.

Table 11: *Auto Arming Options*

Key [2]	Partitioning	Options
OFF	OFF	Regular Arming
OFF	ON	Systems A and B Arming
ON	OFF	Stay Arming
ON	ON	System A Arming

[ENTER] + *Installer Code* + **[10] [9] [10]** + **[2]** *ON/OFF*+ **[ENTER]**

8.2 "NO MOVEMENT" AUTO ARMING

*Feature Select Programming ⇨ Address 086; Key **[6]***
Default: Disabled
If the control panel does not detect any movement (zone openings) for a specified period, the panel will arm the system and transmit the event code programmed at address 517. Note the type of arming is dependent on the Auto Arming Options (see section 8.1.2 on page 34). Program the "No Movement" Auto Arm Time as described below.

Key **[6]** "OFF": No Movement Auto Arm Disabled
Key **[6]** "ON": No Movement Auto Arm Enabled
[ENTER] + *Installer Code* + **[10] [8] [6]** + **[6]** *ON/OFF* + **[ENTER]**

8.2.1 "NO MOVEMENT" AUTO ARM TIME

Decimal Programming ⇨ Address 055
Default: Disabled
000 = disabled; (001 to 255) X 15 minutes
If the “No Movement” Auto Arming (see section 8.2 on page 34) feature is disabled and a time is programmed, the control panel will transmit the event code programmed at address 517 if no movement is detected during the programmed period.

[ENTER] + *Installer Code* + **[10] [5] [5]** + *3-digit decimal value (001 to 255)* + **[ENTER]**

8.3 "ONE-KEY" REGULAR ARMING

*Feature Select Programming ⇨ Address 088; Key **[7]***
Default: Disabled
A User can "Regular" arm the system by pressing and holding the **[10]** or **[ARM]** key for 2 seconds.

Key **[7]** "OFF": "One Key" Regular Arming Disabled
Key **[7]** "ON": "One Key" Regular Arming Enabled
[ENTER] + *Installer Code* + **[10] [8] [8]** + **[7]** *ON/OFF* + **[ENTER]**

8.4 "ONE-KEY" STAY / SYSTEM A ARMING

*Feature Select Programming ⇨ Address 088; Key **[8]***
Default: Disabled
Press and hold the **[11]** key for 2 seconds to "Stay" arm the system if partitioning is disabled. If the system is partitioned, the control panel will arm System "A".

Key **[8]** "OFF": "One Key" Stay/System A Arming Disabled
Key **[8]** "ON": "One Key" Stay/System A Arming Enabled
[ENTER] + *Installer Code* + **[10] [8] [8]** + **[8]** *ON/OFF* + **[ENTER]**

8.5 ARMING USING A KEYSWITCH

*Feature Select Programming ⇨ Address 086; Keys **[2]** and **[3]***
Default: Disabled
The User can use a keyswitch to "Stay" arm or "Regular" arm/disarm the system. If the system is ready and the button is pressed the system will arm. Pressing the button again will disarm the system. The keyswitch will not disarm a “Stay” armed system in alarm. Refer to section 2.7 on page 7 for installation of a keyswitch.

Table 12: *Keyswitch Arming Table*

Key [2]	Key [3]	Function
OFF	OFF	Disabled
ON	OFF	Disabled
OFF	ON	Full Arming
ON	ON	Stay Arming*****

**** Note: If partitioning is enabled, the keyswitch will arm “System A” only.***

[ENTER] + *Installer Code* + **[10] [8] [6]** + **[2]** *and* **[3]** *ON/OFF* + **[ENTER]**

8.6 BELL SQUAWK

*Feature Select Programming ⇨ Address 086; Key **[MEM]***
Default: Disabled
With this feature enabled, the bell or siren will emit a half-second "squawk" upon arming and two half-second "squawks" upon disarming.

Key **[MEM]** "OFF": Bell Squawk Disabled
Key **[MEM]** "ON": Bell Squawk Enabled
[ENTER] + *Installer Code* + **[10] [8] [6]** + **[MEM]** *ON/OFF* + **[ENTER]**

8.7 EXIT DELAY

Decimal Programming ⇨ Address 049
Default: 60 seconds
Exit Delay applies to all zones. This option determines how much time the user has to leave the protected area before the system arms after entering a valid access code. You can program the Exit Delay from 001 to 255 sec.

[ENTER] + *Installer Code* + **[10] [4] [9]** + *3 digit decimal value (001 to 255)* + **[ENTER]**

8.8 BEEP ON EXIT DELAY

*Feature Select Programming ⇨ Address 088; Key **[12]***
Default: Disabled
With this feature enabled, the keypad will emit an intermittent "beep" during the programmed exit delay period (except when in "stay" arming). The frequency of intermittent beeps increases during the last 10 seconds of the exit delay period. For more information on Exit Delay refer to section 8.7.

Key **[12]** "OFF": Beep on Exit Delay Disabled
Key **[12]** "ON": Beep on Exit Delay Enabled
[ENTER] + *Installer Code* + **[10] [8] [8]** + **[12]** *ON/OFF* + **[ENTER]**

8.9 ALARM TRANSMISSION DELAY

Decimal Programming ⇨ Address 059
Default: Disabled
This time limit, set between 5 and 63 seconds, is the delay period before reporting an alarm to the central station after an alarm condition. During this period, disarming the system will cancel all pending alarms and send the restore codes. Programming 000 to 004 in this address disables this feature. ***Maximum 30 seconds on UL listed systems***.

[ENTER] + *Installer Code* + **[10] [5] [9]** + *3-digit decimal value (005 to 063)* + **[ENTER]**

8.10 SILENT ZONES AND SILENT PANICS OPTION

*Feature Select Programming ⇨ Address 086; Key **[9]***

Default: Generate a Silent Alarm

If the **[9]** key is on, silent zones or silent panics only transmit a report to the central station. The system will not indicate an alarm and will not have to be disarmed.

Although, the control panel can still activate a PGM. If a keypad panic has been defined as audible, the control panel will override this option.

Key **[9]** "OFF": Silent Zones and Silent Panics generate a silent alarm
Key **[9]** "ON": Silent Zones and Silent Panics generate a report only
[ENTER] + *Installer Code* + **[10] [8] [6]** + **[9]** *ON/OFF* + **[ENTER]**

8.11 BELL CUT-OFF TIME

Decimal Programming ⇨ Address 052

Default: 5 minutes

After an audible alarm, the bell or siren will stop after the programmed time has elapsed.

[ENTER] + *Installer Code* + **[10] [5] [2]** + *3-digit decimal value (001 to 255) minutes* + **[ENTER]**

8.12 CODE PRIORITY

Feature Select Programming ⇨ Addresses 062 to 078; [all] keys

In order for a user to arm a partitioned system, to "Stay" arm, to "Away" arm or to manually bypass zones, the user must be given code priority. Using the "Feature Select Programming Method" section 4.2.4 on page 16, identify which arming method each user can use. For more information on arming/disarming methods please see USER / KEYPAD FUNCTIONS on page 43. Also refer to the “Programming Guide” for additional information.

Partitioning Disabled:

Addresses 062 to 066: Selected keys indicate which user codes can activate "Stay" arming.
Addresses 068 to 072: Selected keys indicate which user codes can activate "Away" arming.
Addresses 074 to 078: Selected keys indicate which user codes can "bypass" zones.

Partitioning Enabled:

Addresses 062 to 066: Selected keys indicate which user codes can arm “System A".
Addresses 068 to 072: Selected keys indicate which user codes can arm “System B".
Addresses 074 to 078: Selected keys indicate which user codes can "bypass" zones.

8.13 CLOSING DELINQUENCY TIMER

Decimal Programming ⇨ Address 061 ***(Default: Disabled)***

*Feature Select Programming ⇨ Address 090; Key **[3]** **(Default: OFF)***

At midnight everyday, Esprit 728 Ultra will verify when the system was last armed. If the last time the system was armed is greater than the programmed Closing Delinquency Timer, Esprit 728 Ultra will transmit a “Closing Delinquency” event (page 26) to the central monitoring station. Depending on whether address 090 key **[3]** is ON or OFF, the timer can be in days or hours. The Closing Delinquency Timer will be in days if address 090 key **[3]** is OFF. The Closing Delinquency Timer will be in hours if address 090 key **[3]** is ON. Enter **000** to disable the Closing Delinquency Timer.

[ENTER] + *Installer Code* + **[10] [6] [1]** + *3-digit decimal value (000 to 255) days/hours* + **[ENTER]**

The Closing Delinquency Timer and event apply only to System A.

8.14 RESTRICT ARMING ON BATTERY FAILURE

*Feature Select Programming ⇨ Address 090; Key **[4]***

Default: Disabled

If this option is enabled, the control panel will not arm the system if the control panel detects that the backup battery is disconnected, that the fuse is blown or that the battery voltage drops below 10.5V. The control panel will not arm the system until all battery trouble conditions are rectified.

[ENTER] + *Installer Code* + **[10] [9] [10]** + **[4]** *ON/OFF*+ **[ENTER]**

8.15 RESTRICT ARMING ON TAMPER TROUBLE

*Feature Select Programming ⇨ Address 090; Key **[5]***

Default: Disabled

If this option is enabled, the control panel will not arm the system if the control panel detects a tamper trouble on one or more zones. The control panel will not arm the system until all tamper trouble conditions are rectified. The trouble can only be cleared by the installer entering programming mode.

[ENTER] + *Installer Code* + **[10] [9] [10]** + **[5]** *ON/OFF*+ **[ENTER]**

This feature will not function if the Tamper Recognition Options (see page 41) are disabled. Only the installer can clear the Restrict Arming on Tamper Trouble.

PART 9: PGM (PROGRAMMABLE OUTPUT)

We strongly suggest using of the Espload software to program the PGM.

9.1 PGM TYPES

Streamline - Sections 09 ⇨ Hexa Programming - Address 039

The Esprit 728 Ultra control panels have one programmable output (PGM). When a PGM closes, a ground is supplied to activate any device or relay connected to it, providing up to a maximum of 50mA (UL 30mA). When a PGM opens, the circuit is opened from ground, therefore not providing any power to devices connected to it. To program a PGM you must define the PGM state (normally open or normally closed), the timing (regular or timed) and you must define the type of logic ("OR", "AND", "EQUAL"). To do so, use Table 13 to determine which hexa digit to program into address 039, where the first hexa digit programmed corresponds to the PGM. Press the **[2ND]** key for the second digit.

Regular N.O. / N.C.

A triggered PGM will switch to its opposite state (i.e. closed to open or opened to closed). The PGM will return to its original state once the event(s) that triggered it have terminated.

Timed N.O. / N.C.

A triggered PGM will switch to its opposite state (i.e. closed to open or opened to closed). The PGM will remain in its opposite state for the period programmed at address 056 (see section 9.2). If the PGM is triggered again before the period has elapsed, the PGM will remain in its opposite state and reset the timer.

"OR" Logic

Will trigger a PGM when at least one event occurs from a specific group of events (e.g. key **[1]** and/or key **[2]** is pressed on the keypad).

"AND" Logic

The "AND" logic will trigger a PGM when all events, or more, occur from a specific group of events (e.g. Keys **[1]** and **[2]** are pressed simultaneously. Note that pressing those two keys in conjunction with any other key will also trigger the PGM).

"EQUAL" Logic

The "EQUAL" logic will trigger a PGM only when the events from a specific group of events occur (e.g. Key **[1]** and **[2]** are pressed. Note the PGM will only trigger when pressing keys **[1]** and **[2]** simultaneously, if any other key is pressed at the same time (e.g. **[1]**, **[2]** and **[3]**) the PGM will not trigger).

Table 13: *PGM Type Selection*

Key			Key		
[2ND]	: OR	Reg. N.O.	**[8]**	: OR	Reg. N.C.
[1]	: AND		**[9]**	: AND	
[2]	: EQUAL		**[10]**	: EQUAL	
[4]	: OR	Timed N.O.	**[12]**	: OR	Timed N.C.
[5]	: AND		**[BYP]**	: AND	
[6]	: EQUAL		**[MEM]**	: EQUAL	

(For timed PGM, see address 056)

[ENTER] + *Installer Code* + **[10] [3] [9]** + *first digit (see Table 13 above)* + **[2ND]** + **[ENTER]**

9.2 PGM TIMER SETTING

Decimal Programming ⇨ Address 056

Default: 5 seconds

You can program the PGM Timer from 1 to 127 seconds or 1 to 127 minutes. To determine the 3-digit decimal value, do the following:

- To program seconds, the required time is respective to the decimal value
  1 second = 001, 55 seconds = 055, 127 seconds = 127.
- To program the minutes add the required minutes to 128:
  5 minutes: 128 + 5 = 133
  127 minutes: 128 +127 = 255

[ENTER] + *Installer Code* + **[10] [5] [6]** + *3-digit decimal value (001 to 255)* + **[ENTER]**

9.3 PGM OPTIONS

Streamline - Section 10 ⇨ Hexa Programming - Addresses 040 to 043

The PGM options define which sequence of events will trigger the PGM. The PGM options are virtually endless. Therefore, to list them in the manual is impractical. Table 14 (below) contains a list of the most commonly used PGM options with the required 2-digit data for each address. If other options are required, you can fax your requests to Paradox Technical Support, you can visit our web site at www.paradox.ca or the 2-digit data can be derived using the Espload Software as follows:

1. From the "Main Menu" select Accounts
2. Select a current Account or create a new one
3. Press the **[PAGE DOWN]** key from the keyboard until page 9 appears
4. Using the arrow keys and space bar select the PGM options, state, logic and type for the PGM
5. Press the **[F8]** key from the keyboard to view the "Hexadecimal Mode". This mode will display the 2-digit data for addresses 039 to 043.
6. Record these numbers and program them into the control panel or use the Espload Software to download the data directly to the control panel.

If you do not have a copy of the Espload Software, you can obtain a free copy from your local Paradox distributor.

Table 14: *Commonly Used PGM Options*

State	Option	PGM		
		1st digit add. 039	add. 040	add. 042
Timed N.O.	Output enabled for 3 seconds before communication attempt*	**[5]**	**[5] / [2]**	**[2ND] / [8]**
Regular N.O.	Output enabled when keys [1] and [2] are pressed simultaneously	**[1]**	**[5] / [8]**	**[2ND] / [6]**
Regular N.O.	Output enabled when system armed	**[2ND]**	**[2] / [9]**	**[2ND] / [3]**
Regular N.O.	Output enabled during an alarm	**[2ND]**	**[2] / [12]**	**[2ND] / [2]**
Timed N.O.	Output enabled for 2 minutes upon fail to communicate	**[5]**	**[2] / [6]**	**[2ND] / [4]**
Regular N.O.	Output enabled after one failed communication attempt	**[2ND]**	**[7] / [10]**	**[2ND] / [MEM]**
Timed N.O.	Output enabled for 3 seconds after signal received at monitoring station	**[5]**	**[7] / [BYP]**	**[2ND] / [8]**

PART 10: OTHER OPTIONS

10.1 TELEPHONE LINE MONITORING (TLM)

*Feature Select Programming ⇨ Address 086; Keys **[2ND]** and **[1]***
Default: TLM Disabled
When enabled, the system verifies the existence of a telephone line every 4 seconds. After each successful test, the **STATUS** LED (green light) on the control panel flashes briefly during normal operation. If the test fails, the **STATUS** LED will flash ON for 1 second and OFF for 1 second until the control panel detects the telephone line again. TLM will activate a trouble when less than 3 volts is detected in four consecutive tests.
Note: when the dialer detects a telephone ring, the TLM test stops for 1 minute.

There are three TLM options, which are set as indicated in Table 15 below:

Table 15: *Telephone Line Monitoring (TLM)*

Key		
[2ND]	**[1]**	
OFF	OFF	- TLM is disabled (default)
OFF	ON	- TLM generates a trouble only
ON	OFF	- generates an alarm if armed
ON	ON	- silent alarm becomes audible
↳ (address 086, key **[9]** has to be OFF)		

1. **OFF / ON:** Line test failure will generate a trouble indication; key **[10]** will illuminate on the keypad.
2. **ON / OFF:** Line test failure will generate a trouble indication and an alarm if the system is armed.
3. **ON / ON:** Line test failure will generate a trouble indication and cause a silent zone or a silent panic alarm to switch to audible mode.

[ENTER] + *Installer Code* + **[10] [8] [6]** + **[2ND]** *and* **[1]** *ON/OFF* + **[ENTER]**

10.2 DIALING OPTIONS

*Feature Select Programming ⇨ Address 086; Key **[7]***
Default: Pulse Dialing
You can program the control panel to use the pulse dialing or tone/DTMF dialing format.

Key **[7]** "OFF": Pulse Dialing
Key **[7]** "ON": Tone/DTMF Dialing
[ENTER] + *Installer Code* + **[10] [8] [6]** + **[7]** *ON/OFF*+ **[ENTER]**

10.3 DIALING PULSE RATES

*Feature Select Programming ⇨ Address 086; Key **[10]***
Default: Pulse Europe 1:2
This selection reflects the ratio between "pulse" time and "quiet" time. Select Pulse Europe for a 1:2 ratio and select Pulse USA for 1:1.5. Must be set to pulse dialing mode, refer to section 10.2.

Key **[10]** "OFF": Pulse Europe 1:2
Key **[10]** "ON": Pulse USA 1:1.5
[ENTER] + *Installer Code* + **[10] [8] [6]** + **[10]** *ON/OFF* + **[ENTER]**

10.4 KEYPAD PANIC OPTIONS

*Feature Select Programming ⇨ Address 088; Keys **[1]** to **[6]***
Default: Disabled
This feature will generate an alarm when the User presses two specific keys on the keypad simultaneously for 2 seconds as described below:

Key **[1]** "ON" = Panic 1 (keys **[1]** and **[3]**) enabled
Key **[2]** "ON" = Panic 2 (keys **[4]** and **[6]**) enabled
Key **[3]** "ON" = Panic 3 (keys **[7]** and **[9]**) enabled

Keypad panic options:
Key **[4]** "OFF" = Panic 1 silent
Key **[4]** "ON" = Panic 1 audible

Key **[5]** "OFF" = Panic 2 silent
Key **[5]** "ON" = Panic 2 audible

Key **[6]** "OFF" = Panic 3 silent
Key **[6]** "ON" = Panic 3 fire alarm

[ENTER] + *Installer Code* + **[10] [8] [8]** + **[1]** *to* **[6]** *ON/OFF* + **[ENTER]**

Silent operation:
When using the panic keys, the control panel will emit a single confirmation beep. The control panel will transmit the event codes programmed at addresses 513, 514 and 515. The alarm will latch (no audible alarm) and the "armed" light on the keypad will flash until the system is disarmed by a valid User code.

Audible operation:
Same as silent operation, except the alarm output (bell/siren) will activate until the system is disarmed by a valid User code or until the Bell Cut-Off Time (see section 8.11 on page 36) elapses.

Fire operation:
Same as audible operation except that bell/siren output will be pulsed (intermittent "ON"/"OFF").

10.5 PANEL TIME

*Key Access Programming ⇨ Key **[MEM]***
To program the current time into the control panel press:

[ENTER] + *(Installer, Master, or User 1 Code)* + **[MEM]** + *2 digits representing hours (00 to 23) + 2 digits representing minutes (00 to 59)*

10.6 TIME CORRECTION

Streamline - Section 09 ⇨ Hexa Programming - Address 037
If you notice a gain or loss in the control panel time, calculate the average gain or loss per day; select the "opposite" amount from the Time Correction table in order to automatically correct the time setting every 24 hours.

*Example: The control panel loses 4 minutes per month, representing an average loss of 8 seconds per day. Therefore, program **[2]** (plus 8 seconds) as the second digit in address 037 to compensate for the 8-second loss.*

Table 16: *Time Correction Table*

(address 037 second digit)

[2ND]	- No adjustment	**[4]**	- Plus 16 seconds	**[8]**	- Minus 4 seconds	**[12]**	- Minus 20 seconds
[1]	- Plus 4 seconds	**[5]**	- Plus 20 seconds	**[9]**	- Minus 8 seconds	**[BYP]**	- Minus 24 seconds
[2]	- Plus 8 seconds	**[6]**	- Plus 24 seconds	**[10]**	- Minus 12 seconds	**[MEM]**	- Minus 28 seconds
[3]	- Plus 12 seconds	**[7]**	- Plus 28 seconds	**[11]**	- Minus 16 seconds	**[TBL]**	- Minus 32 seconds

10.7 TAMPER / WIRE FAULT RECOGNITION OPTIONS

*Feature Select Programming ⇨ Address 088; Keys **[10]** to **[11]***
Default: Disabled
If the control panel detects an open or a short on a zone when the system is armed, regardless of the tamper/wire settings it will always generate an alarm and trouble indicator (key **[9]**). Alarms will be audible or silent depending on individual zone definitions. If an open or short occurs on a disarmed system, the control panel will generate an incident depending on the following settings:

Table 17: *Tamper Recognition Option*

Key [10]	Key [11]	
OFF	OFF	- Tamper / Wire Fault disabled
OFF	ON	- Trouble Indicator enabled
ON	OFF	- Silent Alarm enabled
ON	ON	- Audible Alarm enabled

Tamper / Wire disabled
Tamper / wiring failure recognition is disabled. Not permitted on UL listed systems.

Trouble enabled
Tamper/wiring failure will generate a trouble indicator (key **[9]**) and a trouble report code (see Tamper/Trouble Codes in section 6.9.6 on page 25) when the system is disarmed.

Silent alarm enabled
Tamper/wiring failure will generate a trouble indicator (key **[9]**), a trouble report code (see Tamper/Trouble Codes in section 6.9.6 on page 25) and a silent alarm (no bells/sirens)

Audible alarm enabled
Tamper/wiring failure will generate a trouble indicator (key **[9]**), a trouble report code (see Tamper/Trouble Codes in section 6.9.6 on page 25) and an audible alarm.

When the zone definition is "24 hour", the tamper definition follows the audible / silent alarm definition of the "24 hour" zone.

10.8 TAMPER BYPASS OPTIONS

*Feature Select Programming ⇨ Address 090; Key **[6]***
Default: Generate alarm on bypassed zone tamper
With this option enabled, the control panel will **not** generate an alarm if a tamper is detected on a bypassed zone while the system is armed. With this option disabled, the control panel will generate an alarm if a tamper is detected on a bypassed zone while the system is armed.

Key **[6]** "OFF": Generate an alarm if a tamper detected on a bypassed zone
Key **[6]** "ON": Ignore tamper if detected on a bypassed zone
[ENTER] + *Installer Code* + **[10] [9] [10]** + **[6]** *ON/OFF* + **[ENTER]**

10.9 INSTALLER TEST MODE

*Key Access Programming ⇨ Key **[8]***
The "Test Mode" will allow you to perform walk tests where the bell or siren will squawk, to indicate opened zones. To enter or exit the control panel "Test Mode" press:

[ENTER] + *Installer Code* + **[8]** *to enable; press* **[8]** *again to disable*

10.10 EXCLUDE POWER FAILURE FROM TROUBLE DISPLAY

*Feature Select Programming ⇨ Address 090; Key **[2ND]***
Default: Disabled
Excludes the Power Failure, key **[2]**, from the Trouble Display (see section 11.12 on page 46).

10.11 AUDIBLE TROUBLE WARNING

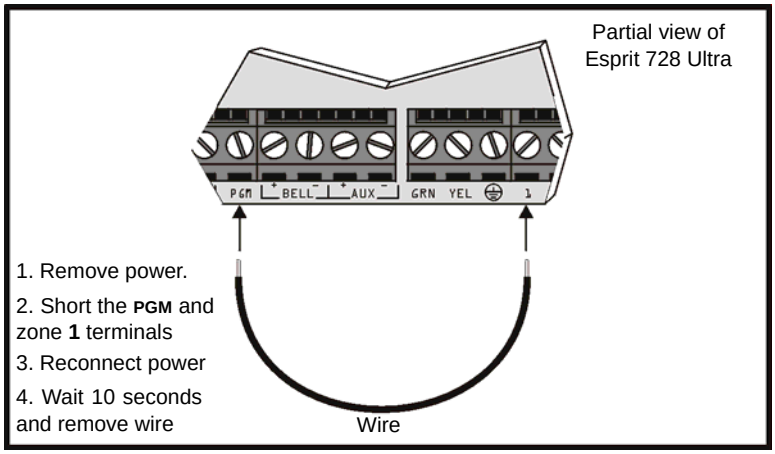
*Feature Select Programming ⇨ Address 090; Key **[9]***
Default: Disabled
Trouble conditions will emit an intermittent "beep" on the keypad. To silence the trouble warning, press the **[TBL]** / **[TRBL]** key.

10.12 POWER DOWN RESET

Performing a power down reset will set the installer and master codes to factory default. Values entered at addresses 008 to 043, 062 to 124, 300 to 527 and all user codes will be set to factory defaults. Programmed values at addresses 004 to 007 do not change. To perform a reset, the installer lock must be disabled. To perform a power down reset perform the following:

1. Verify installer lock is disabled (see section 3.5 on page 14)
2. Remove the battery and AC power from the control panel.
3. Short the **PGM** and zone **1** terminals with a wire.
4. Reconnect the AC and battery power to the control panel.
5. Wait 10 seconds and remove the wire.

Figure 10.1: Power Down Reset



PART 11: USER / KEYPAD FUNCTIONS

The innovative Esprit keypads take a new approach to security features and functions. Each numeral from 1 to 10 on the keypad respectively represents each zone from 1 to 10 on the control panel. When the zone light is "OFF", the status in the protected zone is normal. If the zone light is "ON", this means the zone is open. An LCD keypad will display the open zone numbers on the screen.

The green "READY" indicator on the keypad will illuminate when the status of all the zones is normal (zones are closed). Therefore, all protected windows and doors must be closed and motion detectors must not detect any movement except those zones that have been bypassed.

Confirmation Beep: an intermittent series of beeps ("beep-beep-beep") indicates a successful keypad entry or system operation.

End/Rejection Beep: one long tone ("beeeeeeep") indicates incorrect keypad entry or unsuccessful system operation.

11.1 PROGRAMMING MASTER AND USER CODES

The Esprit+ control panels have one Master (00) code and up to 48 User (01 to 48) codes. The default Master code is 474747. The Master code can arm the system using any arming method, can create/modify user codes and can perform Key Access Programming (see section 11.13 on page 47). The User 1 code can create/modify access codes and perform key access programming. The access code consists of either 4- or 6-digits and each digit can be any value from 0 to 9. ***Note: do not enter [2ND] when programming the master code as this will invalidate the master code.***

[ENTER] + *Master or User 1 Code + 2-digit code number (00 to 48) + 4 or 6-digit access code* + **[ENTER]**

11.2 REGULAR ARMING

This method, commonly used for day-to-day arming, will arm all the zones in the system. To do so, the keypad's green "READY" light must be illuminated, indicating that all zones are closed. All doors and windows must be closed, and there can be no movement in areas monitored by motion detectors. Once the "READY" light is on, a valid user access code must be entered. If a mistake is made entering the code or if the "READY" indicator is not on when the code was entered, the keypad will emit a "rejection beep" (beeeeeeep).

When the correct user access code is entered, the keypad will emit a "confirmation beep" (beep-beep-beep) and the red "ARM" indicator will illuminate. The "READY" light will flash and the keypad will "beep" during the exit delay period (see section 8.8 on page 35). During the final 10 seconds of the exit delay, the keypad will "beep" and the "READY" indicator will flash at a faster rate. At the end of the exit delay, the keypad will emit a "confirmation beep", the green "READY" indicator will extinguish and the red "ARM" indicator will remain illuminated to indicate that the system is armed.

11.2.1 "ONE-KEY" REGULAR ARMING

To use this feature, enable the "One-Key" Regular Arming option (see section 8.3 on page 34). When the green "READY" light is on, pressing and holding the **[10]** or **[ARM]** key for 2 seconds will arm all zones in the system. This feature can be used to allow specific individuals like service personnel (i.e. cleaners, maintenance) to arm the system when leaving the protected area, without giving them access to any other control panel operations. The use of a valid access code is still required to disarm the system. For details on "Regular Arming", refer to section 11.2.

11.3 FORCE (AWAY) ARMING

To rapidly arm the system without having to wait for the green "READY" indicator, simply press the **[AWAY]** key followed by a valid access code. Once the exit delay expires, any open zones will be considered "deactivated" by the control panel. Therefore, these zones will not generate an alarm. If while the system is armed a "deactivated" zone is closed, the control panel will revert that zone to "active" status, generating an alarm if breached.

If a mistake is made entering the code, the keypad will emit a "rejection beep" (beeeeeeep). When the correct user code is entered, the keypad will emit a "confirmation beep" (beep-beep-beep) and the red "arm" indicator will illuminate. The "READY" indicator will flash and the keypad will "beep" during the exit delay period (see section 8.8 on page 35). During the final 10 seconds of the exit delay, the keypad will "beep" and the "READY" indicator will flash at a faster rate. At the end of the exit delay, the green "READY" indicator will extinguish and the red "ARM" indicator will remain illuminated. If programmed at address 518, the control panel will send a "partial arm" report code to the central station. ***Note, to use this method the user must have "away" arming priority, see Code Priority in section 8.12 on page 36.***

11.4 STAY ARMING

"Stay" arming allows the user to remain in the protected area while partially arming the system. This means that they can stay in and move around the establishment, while certain designated zones are armed. For example, entry/exit points like doors or windows, the basement, or perhaps all the zones on the perimeter of the establishment may be armed when going to sleep at night, while the other zones remain deactivated. To program which zones will be activated when "stay arming" the system refer to "System A" / Stay Zones in section 7.10.1 on page 31. Also note that fire zones must be programmed as "stay zones"; they can not be bypassed.

Unlike regular arming, the green "READY" indicator does not have to be illuminated. Only doors and windows programmed as "stay zones" must be closed, and there can be no movement in areas monitored by motion detectors in "stay zones". To "stay" arm the system, press the **[STAY]** key followed by a valid access code. If a mistake is made entering the code or if a "stay zone" is open when entering the code, the keypad will emit a "rejection beep" (beeeeeeep). After entering the correct user access code, the keypad will emit a "confirmation beep" (beep-beep-beep), the green "READY" indicator will flash and the **[STAY]** key will illluminate during the exit delay period. During the final 10 sec. of the exit delay, the "READY" indicator will flash at a faster rate and the **[STAY]** key will remain illuminated. At the end of the exit delay, the keypad will emit a "confirmation beep", the "READY" and "ARM" indicators and the **[STAY]** key will remain illuminated. ***Note, to use this method the user must be given "stay" arming priority, see Code Priority in section 8.12 on page 36.***

11.4.1 "ONE-KEY" STAY ARMING

To use this feature, enable the "One-Key" Stay / "System A" Arming option (see section 8.4 on page 35). When all "stay zones" are closed, pressing and holding the **[STAY]** key for 2 seconds will arm only zones programmed as "stay zones". For details on "Stay Arming", refer to section 11.4.

11.4.2 "ONE-KEY" DOUBLE STAY ARMING

During the "stay" arming exit delay (see section 11.4), press and hold the **[STAY]** key for 2 seconds until you hear a single "beep". This will switch all "entry delay" zones to "instant" zones (see section 7.6, section 7.8 and section 7.9 on page 30). Therefore, any entry delay zone that is breached will immediately generate an alarm instead of waiting a pre-determined period.

11.4.3 FAST EXIT

This feature is only available when the system is "Stay" armed (see section 11.4). This feature will allow the user to exit premises while the system is already armed and keep the system armed. This can be done one of two ways:

- With the system already "stay" armed (after its exit delay), press and hold the **[STAY]** key for 2 seconds. The system will switch to exit delay mode (green "READY" indicator flashes), allowing time for the user to exit the premises. At the end of the exit delay period, the system will return to "stay" arm mode.
- With the system already "stay" armed, press and hold the **[10]** or **[ARM]** key for 2 seconds. The system will switch to exit delay mode (green "READY" indicator flashes). At the end of the exit delay period, the system will "regular" arm the system (see section 11.2 on page 43).

11.5 ARMING / DISARMING PARTITIONS

Thanks to the partitioning feature, two distinct systems (A and B) can be created and controlled by the control panel. Partitioning can be used in installations where shared security systems are more practical, such as office / warehouse buildings, or apartment / condominium complexes. Each zone can be assigned to System A, System B, both systems or given no system assignment. User access codes can also be programmed to arm/disarm one system or both systems simultaneously (see Code Priority in section 8.12 on page 36). Unlike regular arming, the green "READY" indicator does not have to be illuminated. All doors and windows pertaining to the desired system must be closed, and there can be no movement in areas monitored by motion detectors in the desired system.

1. If a user is not given any code priorities, the user will never be able to arm or disarm the system when partitioned.
2. If a user is given code priority to one of the two systems, entering the correct access code will arm or disarm the system to which the user was given priority.
3. If a user is given code priority to arm/disarm both systems A & B, it will function as follows:

- If the User enters the correct access code when systems "A" and "B" are disarmed, it will completely arm both systems.
- If the User enters the correct access code when systems "A" and "B" are armed, it will completely disarm both systems.
- When the system is partially armed, (i.e. only “System A" or only “System B" is armed) entering the correct access code will arm the other system.
- To arm/disarm each system separately, do the following:
  Press **[STAY]** + **[VALID ACCESS CODE]** to arm/disarm "System A".
  Press **[AWAY]** + **[VALID ACCESS CODE]** to arm/disarm "System B".

If a mistake is made entering the code or if a zone in the desired system is open when entering the code, the keypad will emit a "rejection beep" (beeeeeeep). When the access code is correctly entered, the keypad will emit a "confirmation beep" (beep-beep-beep). The keypad can display the status of both systems. When "System A" is armed, the **[STAY]** key and "ARM" indicator will remain on. If System B is armed, the **[AWAY]** key and "ARM" indicator will remain on. When both systems are armed, all three lights will remain on.

11.5.1 ONE-KEY "SYSTEM A" ARMING

This feature allows the user to arm "System A" without the use of an access code. To use this feature, enable the "One-Key" Stay / "System A" Arming option (see section 8.4 on page 35). When all the zones in "System A" are closed, press and hold the **[STAY]** key for 2 seconds to arm "System A". This feature can be used to allow specific individuals like service personnel (i.e. cleaners, maintenance) to arm the system when leaving the protected area,

without giving them access to any other control panel operations. For details on "System A" Arming refer to section 11.5.

11.6 SYSTEM DISARMING

The user must enter the protected area through a designated entry/exit point. The keypad will "beep" during the entry delay reminding the user to disarm the system. Upon entry of a valid access code, the red "ARM" indicator will extinguish and the keypad will emit a confirmation "beep" (beep-beep-beep) denoting the system has been disarmed. If an incorrect access code is entered, the keypad will emit a rejection "beep" (beeeeeeeep). Press the **[CLEAR]** key at any time to clear data and re-enter another access code. If an alarm was generated from a fire or 24-hour zone while the system was armed, entering a valid user code will silence the siren. However, you should then check the zone and eliminate the cause of the alarm. If you are unable to pinpoint the reason for the alarm, call your installer.

11.7 ALARM MEMORY

If an alarm condition occurs when the system is armed, the **[MEM]** key will turn on. A record of all alarm situations that occur is stored in memory. After disarming the system, pressing once on the [mem] key will display which zones were open during the alarm period by illuminating the corresponding zone indicator(s) or by displaying it on the LCD screen depending on the type of keypad used. Please note if the **[MEM]** key is pressed again when using LED keypads (636 and 646) you will enter the event display which can only be decoded with a 642 LCD keypad. To exit the alarm memory display, press the **[CLEAR]** key. If using a 642 LCD keypad press the **[MEM]** key followed by the **[INFO]** key and use the [▲] and [▼] keys to scroll through the event list in memory. The alarms will remain in memory until the system is armed and disarmed without generating an alarm.

11.8 KEYSWITCH OR PUSHBUTTON ARMING/DISARMING

A keyswitch or push button can be used to "Stay" (section 11.4 on page 43) or "Regular" (section 11.2 on page 43) arm/disarm the system. If the system is ready and the button is pressed, the system will arm. Pressing the button again will disarm the system. If a "Stay" armed system is in entry delay or if an alarm has been generated while "Stay" armed, the keyswitch or push button can not be used to disarm the system. In this case, only a keypad can disarm the system. In a partitioned system the keyswitch or push button will arm/disarm "System A" regardless of the "System B" status. To enable this feature and set the options (stay or regular arming) refer to Arming Using a Keyswitch in section 8.5 on page 35.

11.9 MANUAL ZONE BYPASSING

When a zone is bypassed it will no longer be monitored by the control panel, hence, will not generate an alarm. A user may wish to bypass certain zones when, for example, workers are renovating part of the establishment or if a component in the system is damaged. Manual bypass arming instructs the control panel to ignore ("deactivate") specified zones in order to arm the remainder of the system. Verify that the following options are set in the control panel so that a user can manually bypass zones:

- You must first define which zones are Bypass Enabled Zones (see section 7.11 on page 31). Zones not identified as Bypass Enabled can not be bypassed.
- Only users with the appropriate Code Priority (see section 8.12 on page 36) can bypass zones.
- Please note, the control panel can not bypass fire zones.

To bypass zones, press the **[BYP]** key followed by a valid access code. If the wrong code was entered or a code without bypass priority, the keypad will emit a "rejection beep" (beeeeeeep). If the correct code is entered, the **[BYP]** key will flash to indicate that you are now in "bypass mode". If there are any currently bypassed zones, their respective zone indicators will turn on. Press the key corresponding to the zone you wish to bypass until their respective zone indicator turns on. If the zone you wish to bypass has not been programmed as "bypass enabled", the corresponding zone indicator will never turn on. Press the **[CLEAR]** key to erase the current zone bypass entries and exit the "bypass mode". If you have entered the correct bypass entries, press the **[ENTER]** key to accept these entries. The **[BYP]** key will remain on, denoting that zones in the system are currently bypassed, hence, the next time the system is armed, certain zones will be bypassed. When the system is disarmed, the bypass entries will be erased.

11.10 BYPASS RECALL

This feature permits users to reinstate the last zone bypass entries saved in memory. When the system is disarmed, the bypass entries will be erased. By using the "bypass recall" feature, you can reinstate the previous bypass entries saved in memory. While in the "bypass mode", press the **[BYP]** and **[ENTER]** keys and the previous bypass status will be re-established. This eliminates the need to re-enter the bypass entries every time the system is armed. If a user is in the process of entering new bypass entries on the keypad, pressing the **[BYP]** key will override new information and reinstate previous bypass entries.

11.11 KEYPAD CHIME ZONES

A chimed zone "advises" you when a zone is opened by creating a rapid intermittent beep tone (beep-beep-beep-beep-beep). Up to six zones plus the local keypad zone can be programmed as chime zones. To turn on the "chime zone" feature, press and hold the key corresponding to the desired zone (**[1]** to **[6]**) for three seconds until the intermittent chime beep is heard. This means that the chime feature has been activated. If a continuous beep is heard, this means that the chime beep has been deactivated. To enable the chime feature on the keypad zone, press and hold the **[8]** key for three seconds. To mute the keypad's alarm

sounder, press and hold the **[9]** key for three seconds until the intermittent chime beep is heard. This means that the muting feature has been activated. If a continuous beep is heard, this means that the muting feature has been deactivated. If there is more than one keypad in the system, please "chime" program each keypad separately. Keypad chimes must be reprogrammed if the panel suffers a total power loss.

Key **[1]**-**[6]**: Turns chime "ON" or "OFF" in zones numbered 1-6
Key **[8]**: Turns chime "ON" and "OFF" for the local keypad zone
Key **[9]**: Turns the keypad's alarm sounder muting "ON" or "OFF"

11.12 TROUBLE DISPLAY MONITORING

Trouble conditions are continuously monitored by the control panel, which recognizes and displays 10 different trouble conditions on the keypad. When a trouble condition occurs, the **[TBL] / [TRBL]** key will illuminate and the keypad will emit an intermittent beep if the Audible Trouble Warning (see section 10.11 on page 42) is enabled. Press the **[TBL] / [TRBL]** key to switch to "trouble display" mode. The **[TBL] / [TRBL]** key will flash and any illuminated keys correspond to a current trouble condition as described below. Press any key to exit the "trouble display" mode.

11.12.1 NO BATTERY / LOW BATTERY - KEY [1]

The control panel conducts a dynamic battery test under load every 60 seconds. The illumination of the **[1]** key indicates that the back-up battery is disconnected or that the battery should be replaced, as it will not provide adequate back-up current in case of AC loss. If the control panel is currently running on battery power, the illumination of the **[1]** key indicates that the battery voltage has dropped to 10.5 volts or lower.

11.12.2 POWER FAILURE - KEY [2]

The control panel conducts a dynamic battery test under load every 60 seconds. The control panel will detect a power loss if a continuous loss of AC (less than or equal to 12.5V) has occurred during the period between two AC power tests (64 to 116 seconds). If a power loss remains present throughout the Power Failure Report Delay (see section 6.12 on page 27), the panel will transmit the report code programmed at address 507 and the **[TBL] / [TRBL]** key will flash rapidly indicating a power failure. The trouble indicator is restored if AC is detected during the dynamic battery test. You can remove the power failure trouble indicator from the trouble display by enabling the Exclude Power Failure From Trouble Display option (see section 10.10 on page 42).

11.12.3 BELL DISCONNECTED - KEY [4]

The illumination of the **[4]** key indicates that there is no bell or siren connected to the bell output terminals of the panel. Please note that when connecting a bell or siren to an optional relay output the trouble indicator will always be on. To avoid this, connect a 1kΩ resistor across the bell output. The control panel only recognizes bells or siren connected directly to the bell output of the control panel not those connected through a relay.

11.12.4 MAXIMUM BELL CURRENT - KEY [5]

The bell output is microprocessor controlled and will automatically shutdown when the current exceeds 3A. If this occurs, the **[5]** key will illuminate. After opening the short or reducing the load, the bell current is restored upon the following alarm generation.

This trouble indicator will only appear when the bell is activated (i.e. during an alarm).

11.12.5 MAXIMUM AUXILIARY CURRENT - KEY [6]

The illumination of the **[6]** key indicates that the auxiliary current has exceeded 650mA. This will cause automatic shutdown of the auxiliary output. After opening the short or reducing the load, the panel will restore power to the auxiliary output following the dynamic battery test (approximately 60 seconds).

11.12.6 COMMUNICATOR REPORT FAILURE - KEY [7]

If the control panel was unsuccessful when attempting to communicate with the central station computer or the Esplad software the **[7]** key will illuminate.

11.12.7 TIMER LOSS - KEY [8]

The illumination of the **[8]** key indicates that the control panel's internal clock must be reprogrammed. To reprogram the timer press:

[ENTER] + *(Installer, Master or User 1 Code)* + **[MEM]** + *2 digits (00 to 23) representing hours* + *2 digits (00 to 59) representing minutes* + **[ENTER]**

11.12.8 TAMPER / ZONE WIRING FAILURE - KEY [9]

If the Tamper / Wire Fault Recognition Options (see section 10.7 on page 41) are enabled, the **[9]** key will illuminate to indicate a short or cut on a zone input. In order to provide line short recognition the zone connections must have EOL resistors (see Zone Input Terminal Connections section 2.8 on page 7 to section 2.10 on page 9).

11.12.9 TELEPHONE LINE MONITORING - KEY [10]

If the Telephone Line Monitoring (TLM) feature (see section 10.1 on page 40) is enabled, the **[10]** key will illuminate to indicate that the control panel has not detected the presence of a telephone line for 30 seconds.

11.12.10 FIRE TROUBLE - KEY [11]

The illumination of the **[11]** key indicates a tamper on zone 3, if identified as a fire zone (see "24 Hour" & Fire Zones in ssection 7.5 on page 29).

11.13 KEY ACCESS PROGRAMMING

This method allows for quick programming of features without entering addresses or section numbers. The following features are programmed using the installer code as well as the master code and user 1 codes.

- Auto Arm Time: for details see section 8.1.1 on page 34.
- Panel Time: for details see section 10.5 on page 41.
- Manual Test Report: for details see section 6.11 on page 27.
- Call Esploa: for details see section 5.5 on page 18.
- Answer Esploa: for details see section 5.6 on page 18.
- Cancel Communication: for details see section 5.7 on page 18.
- Installer Test Mode: for details see section 10.9 on page 42.

IMPORTANT INFORMATION

This equipment complies with Part 68 of the FCC rules subpart D and CS-03. Inside the cover of this equipment is a label that contains, among other information, the FCC registration number of this equipment.

NOTIFICATION TO TELEPHONE COMPANY

Upon request, customer shall notify telephone company of particular line to which the connection will be made, and provide the FCC registration number and the ringer equivalence of the protective circuit.

FCC REGISTRATION NUMBER: 5A7CAN-22633 - AL - E
RINGER EQUIVALENCE NUMBER:0.1B (U.S. & CANADA)
USOC JACK: RJ31X (USA), CA31A (CANADA)

TELEPHONE CONNECTION REQUIREMENTS

Except for telephone company provided ringers, all connections to the telephone network shall be made through standard plugs and telephone company provided jacks, or equivalent, in such a manner as to allow for easy, immediate disconnection of terminal equipment. Standard jacks shall be so arranged that, if plug connected thereto is withdrawn, no interference to operation of equipment at customer's premises which remains connected to telephone network shall occur by reason of such withdrawal.

INCIDENCE OF HARM

Should terminal equipment/protective circuitry cause harm to telephone network, telephone company shall, where practicable, notify customer that temporary disconnection of service may be required; however, where prior notice is not practicable, the telephone company may temporarily discontinue service if action is deemed reasonable in circumstances. In case of temporary discontinuance, telephone company shall promptly notify customer and will be given opportunity to correct the situation.

CHANGES IN TELEPHONE COMPANY EQUIPMENT OR FACILITIES

The telephone company may make changes in its communication facilities, equipment operations or procedures, where such actions are reasonably required and proper in its business. Should any such changes render customer's terminal equipment incompatible with the telephone company facilities, the customer shall be given adequate notice to effect the modifications to maintain uninterrupted service.

GENERAL

This equipment shall not be used on coin telephone lines. Connection to party line service is subject to state tariffs.

RINGER EQUIVALENCE NUMBER (REN)

The ren is useful to determine the quantity of devices that you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, sum of the ren's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices that you may connect to your line, you may want to contact your local telephone company.

EQUIPMENT MAINTENANCE FACILITY

If you experience trouble with this telephone equipment, please contact facility indicated below for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from network until problem is corrected or until you are sure that the equipment is not malfunctioning.

FCC PART 15, WARNINGS INFORMATION TO USER

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to equipment intermittently, the user is encouraged to try to correct the interference by one or more of the following measures: (1) re orient or relocate the receiving antenna; (2) increase the separation between the equipment and receiver; (3) connect the equipment to an outlet on a circuit other than the one to which the receiver is connected, or (4) consult the dealer or an experienced radio/tv technician for assistance.

CAUTION:

Changes or modifications not expressly approved by PARADOX SECURITY SYSTEMS could void the user's authority to operate the equipment.

WARRANTY

The Seller warrants its products to be free from defects in materials and workmanship under normal use for a period of one year (except as indicated otherwise). Except as specifically stated herein, all express or implied warranties whatsoever, statutory or otherwise, including without limitation, any implied warranty of merchantability and fitness for a particular purpose, are expressly excluded. Because Seller does not install or connect the products and because the products may be used in conjunction with products not manufactured by Seller. Seller cannot guarantee the performance of the security system. Seller obligation and liability under this warranty is expressly limited to repairing or replacing, at Seller's option, any product not meeting the specifications. In no event shall the Seller be liable to the buyer or any other person for any loss or damages whether direct or indirect or consequential or incidental, including without limitation, any damages for lost profits stolen goods, or claims by any other party, caused by defective goods or otherwise arising from the improper, incorrect or otherwise faulty installation or use of the merchandise sold.

ATTACHMENT LIMITATION NOTICE

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is

used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all of the devices does not exceed 100.

Industry Canada certification is only applicable to installation of devices which include transformers approved by the Canadian Standards Association (CSA).

RESTRICTIONS CONCERNANT LE RACCORDEMENT DE MATÉRIEL

L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme à certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Le Ministère garantir toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. De plus, le matériel doit être installé en suivant une méthode acceptable de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêchent pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être effectuées par un centre de service d'entretien canadien autorisé désigné par le fournisseur. La compagnie de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause d'un mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'energie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

AVERTISSEMENT: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à une service d'inspection des installations électriques, ou à un électricien, selon le cas.

L'indice de charge (IC) assigné à chaque dispositif indique, pour éviter toute surcharge, le pourcentage de la charge totale qui peut être raccordée à un circuit téléphonique bouclé utilisé par ce dispositif. La terminaison du circuit bouclé peut être constituée de n'importe quelle combinaison de dispositifs, pourvu que la somme des indices de charge de l'ensemble des dispositifs ne dépasse pas 100.

La certification d'Industrie Canada s'applique seulement aux installations d'appareils utilisant un transformateur approuvé par l'Association Canadienne de Normalisation (CSA).

Requirements and Guidelines for UL Installations

UL has only evaluated the 708, 728, 728 EXPRESS, 738, 738 EXPRESS, 748 and 748ES for compatibility with the Ademco model 685, FBI model CP220FB, SUR-GUARD SG-MLR2-D6 and Silent Knight model 9000.

UL listed in accordance with standard **UL1023** (Household Burglar - Alarm System Units), standard **UL985** (Household Fire Warning Units) and **UL1635** (Digital Alarm Communicator System Units).

Look for the UL mark on the product. Only products bearing this mark are UL listed.

Some operational features are not permitted in UL installations. To respect the standards for household applications, the installer should follow these guidelines when configuring the system.

1. All components of the system should be UL listed for the intended application.
2. If the installation is a FIRE ALARM application, refer to NFPA Standard 74 for details on smoke detector locations. There must be at least one UL-Listed Indoor Fire Alarm Warning Signalling Appliance.
3. For UL/ULC Burglar Applications:
   Maximum entry time = UL 45 seconds / ULC 60 seconds
   Maximum exit time = UL 60 seconds / ULC 120 seconds
   Minimum bell cutoff time = 4 minutes
4. Keypad Model 639 is not UL listed.
5. The upload/download software should not be used on UL listed systems.
6. All outputs are Class 2 or power-limited, except for the battery terminal. The Class 2 and power-limited fire alarm circuits shall be installed using CL3, CL3R, CL3P or substitute cable permitted by the National Electrical Code, ANSI/NFPA 70.

Requirements and Guidelines for AUSTEL Installations

Austel-approved installations: use a transformer approved by the State Electricity commission, such as "Dyen" PA series 15VAC 22VA. With this transformer, do not exceed the following maximum currents:
- maximum Auxiliary current (including keypads): 300mA
- maximum Bell current :600mA

Requirements and Guidelines for C-UL Installations

When the system controls a fire alarm system, wiring method must correspond to section 32 of the Canadian Electrical Code.

Look for the ULC mark on the product. Only products bearing this mark are ULC listed.

For technical support in the US and Canada, call 1-800-791-1919, Monday to Friday, 8 a.m. to 8 p.m. EST.
Technical support can also be reached by fax at (450) 491-2313, or via e-mail at support@paradox.ca.

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